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IDENTIFIERS	Military Curriculum Project

ABSTRACT

This self-paced, individualized course, adapted from military curriculum materials for use in vocational and technical education, teaches students about the basic training and supervisory techniques required for proper sanitation of food service personnel and kitchen and dining facility equipment. This student workbook, one of three parts of the course, contains three sections. The first section explains basic training and supervision techniques. Training and supervising food service personnel in sanitation standards is discussed in section 2. The final section focuses on training and supervision of food service workers in the sanitation of equipment. Subjects covered include cleaning and sanitizing supplies and facilities; cleaning and sanitizing food service areas and equipment such as storage areas, food preparation equipment, and dishes; and garbage and waste disposal procedures. Each assignment in the workbook is divided into three parts: reading assignment and objectives, reading material, and self-quiz with answers and references. Photographs and line illustrations are used throughout the text. (KC)

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SUBSISTENCE SPECIALIST FIRST CLASS, 9-11

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MILITARY CURRICULUM MATERIALS

The military-developed curriculum materials in this course package were selected by the National Center for Research in Vocational Education Military Curriculum Project for dissemination to the six regional Curriculum Coordination Centers and other instructional materials agencies. The purpose of disseminating these courses was to make curriculum materials developed by the military more accessible to vocational educators in the civilian setting.

The course materials were acquired, evaluated by project staff and practitioners in the field, and prepared for dissemination. Materials which were specific to the military were deleted, copyrighted materials were either omitted or approval for their use was obtained. These course packages contain curriculum resource materials which can be adapted to support vocational instruction and curriculum development.

The National Center Mission Statement

The National Center for Research in Vocational Education's mission is to increase the ability of diverse agencies, institutions, and organizations to solve educational problems relating to individual career planning, preparation, and progression. The National Center fulfills its mission by:

- Generating knowledge through research
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- Evaluating individual program needs and outcomes
- Installing educational programs and products
- Operating information systems and services
- Conducting leadership development and training programs

FOR FURTHER INFORMATION ABOUT
Military Curriculum Materials
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THE NATIONAL CENTER FOR RESEARCH IN VOCATIONAL EDUCATION

Military Curriculum Materials for Vocational and Technical Education

Information and Field Services Division

The National Center for Research in Vocational Education

Military Curriculum Materials Dissemination Is . . .

an activity to increase the accessibility of military developed curriculum materials to vocational and technical educators.

This project, funded by the U.S. Office of Education, includes the identification and acquisition of curriculum materials in print form from the Coast Guard, Air Force, Army, Marine Corps and Navy.

Access to military curriculum materials is provided through a "Joint Memorandum of Understanding" between the U.S. Office of Education and the Department of Defense.

The acquired materials are reviewed by staff and subject matter specialists, and courses deemed applicable to vocational and technical education are selected for dissemination.

The National Center for Research in Vocational Education is the U.S. Office of Education's designated representative to acquire the materials and conduct the project activities.

Project Staff:

Wesley E. Budke, Ph.D., Director
National Center Clearinghouse

Shirley A. Chase, Ph.D.
Project Director

What Materials Are Available?

One hundred twenty courses on microfiche (thirteen in paper form) and descriptions of each have been provided to the vocational Curriculum Coordination Centers and other instructional materials agencies for dissemination.

Course materials include programmed instruction, curriculum outlines, instructor guides, student workbooks and technical manuals.

The 120 courses represent the following sixteen vocational subject areas:

- Agriculture
- Aviation
- Building & Construction Trades
- Clerical Occupations
- Communications
- Drafting
- Electronics
- Engine Mechanics
- Food Service
- Health
- Heating & Air Conditioning
- Machine Shop
- Management & Supervision
- Meteorology & Navigation
- Photography
- Public Service

The number of courses and the subject areas represented will expand as additional materials with application to vocational and technical education are identified and selected for dissemination.

How Can These Materials Be Obtained?

Contact the Curriculum Coordination Center in your region for information on obtaining materials (e.g., availability and cost). They will respond to your request directly or refer you to an instructional materials agency closer to you.

CURRICULUM COORDINATION CENTERS

EAST CENTRAL
Rebecca S. Douglass
Director
100 North First Street
Springfield, IL 62777
217/782-0759

NORTHWEST
William Daniels
Director
Building 17
Airdustrial Park
Olympia, WA 98504
206/753-0879

MIDWEST
Robert Patton
Director
1515 West Sixth Ave.
Stillwater, OK 74704
405/377-2000

SOUTHEAST
James F. Shill, Ph.D.
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Mississippi State University
Drawer DX
Mississippi State, MS 39762
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NORTHEAST
Joseph F. Kelly, Ph.D.
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Director
1776 University Ave.
Honolulu, HI 96822
808/948-7834

SUBSISTANCE SPECIALIST FIRST CLASS 9-11

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SUBSISTANCE SPECIALIST FIRST CLASS

Correspondence Course 9-11

SS1-0151

Developed by:
United States Coast Guard

Occupational Area:
Food Service

Development and Review Dates:
April 1982

Print Pages:
91

Availability: The National Center for Research in Vocational Education; ERIC

Suggested Background:

NONE

Target Audiences:

Grade 11 - Adult

Organization of Materials:

Student workbook with objectives, assignments, tests and answers. -

Type of Instruction:

Individualized, self-paced

Type of Materials:	No. of Pages:	Average Completion Time:
Student Workbook	84	Flexible

Supplementary Materials Required:

NONE

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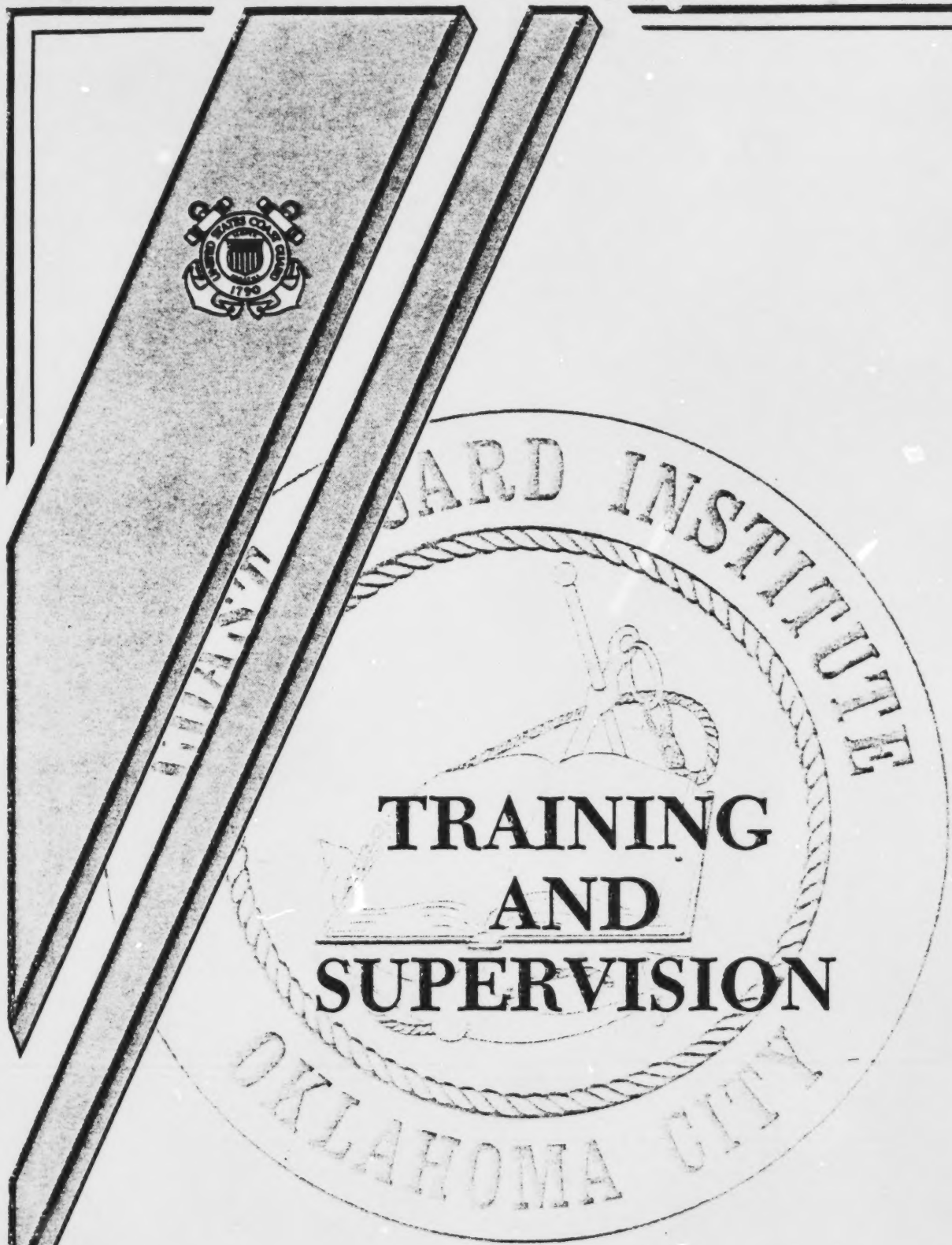
Course Description:

The primary purpose of this course is to provide the subsistence specialist with an opportunity to acquire knowledge of the basic training and supervisory techniques required to ensure the proper sanitation of Subsistance Specialist personnel and dining facility equipment.

Each assignment is divided into three parts; reading assignment and objectives, reading material, and self-quiz with answers and references.

The text provides information on:

Training and Supervision: Basic Techniques
Training and Supervision: Sanitation Standards for Food Service Personnel
Training and Supervision: Sanitation of Equipment.



TRAINING AND SUPERVISION

U. S. DEPARTMENT OF TRANSPORTATION
U. S. Coast Guard (04/82)

U. S. Coast Guard Institute
PAMPHLET NO. 27

4

TRAINING AND SUPERVISION

First Edition: June 1981
Reprinted: April 1982

U.S. Coast Guard Institute
Personnel Services Branch
P.O. Substation 18
Oklahoma City, OK 73169

FTS: 749-2333

Questions about this text should be addressed to the Subject Matter Specialist for the Subsistence Specialist Rating.

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REFERENCES

Food Service Sanitation Manual (COMDTINST M6240.4)
Food Service Operations (NAVSUP-421)

NOTICE TO STUDENTS

This is the first of two pamphlets that make up the SS1 course. The primary purpose of this self-paced, non-resident training pamphlet is to provide the subsistence specialist with an opportunity to acquire knowledge of the basic training and supervisory techniques required to ensure the proper sanitation of SS personnel and dining facility equipment. Once these skills have been acquired, the SS will also have mastered the training and supervision knowledge factors, as contained in the Enlisted Qualifications Manual (COMDTINST M1414.8), that are required for advancement to SS1.

IMPORTANT NOTE: This text has been compiled for TRAINING ONLY. It should NOT be used in lieu of official directives or publications. The text information is current according to the bibliographic references cited. You should, however, remember that it is YOUR responsibility to keep abreast of the latest professional information available for your rating. Current information is available in the Coast Guard Enlisted Qualifications Manual COMDTINST M1414.8 (old CG-311).

This text provides basic information on:

Training and Supervision: Basic Techniques
Training and Supervision: Sanitation Standards for Food Service Personnel
Training and Supervision: Sanitation of Equipment

Each assignment is divided into three parts:

Reading assignment and objectives.
Reading material.
Self-quiz with answers and references. The answers are located on the page(s) immediately following the quizzes.

The objectives for each assignment should lead you in the right direction for study purposes. The self-quizzes test your master of the objectives. The quizzes allow you to score yourself. If properly used, the quizzes will help you in preparing for you End-of-Course Test and your Servicewide Exam. You must understand all the material to pass the EOCT. Your success in a course depends entirely on YOU and YOUR determination to achieve.

When you have completed all the assignments for this course and mastered each objective, you should have a thorough understanding of the material and should be ready to pass your EOCT. You will not find any of the quiz items on the EOCT.

REMEMBER--You must receive a score of 80% or better to pass the End-of-Course Test. You should use your spare time to REVIEW the material before you take the EOCT.

SWE STUDY SUGGESTION: Servicewide exam questions for your rate and pay grade are based on the Professional and Military Requirements sections of the Enlisted Qualifications Manual. If you use the references from the text and consult the Enlisted Qualifications Manual, you should have good information for review when you prepare for your servicewide exam.

This pamphlet is only one part of the total Coast Guard training program. By its very nature, it can take you only part of the way to a training goal. Practical experience, school, selected reading, and the desire to accomplish are also necessary to round out a successful training program.

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TRAINING AND SUPERVISION: BASIC TECHNIQUES

Reading Assignment:
Pages 1-1 through 1-3

OBJECTIVES

To successfully complete this assignment, you must study the text and master the following objectives:

1. State the most important responsibility of a supervisor.
2. Describe the three-step method which should be used to train newly-assigned personnel to perform a specific task.
3. Explain why follow-up training is necessary.

INTRODUCTION

As a subsistence specialist your primary responsibility is to provide the crew with healthy, nutritious and tasty meals. When you become a first class petty officer you will probably have to supervise any number of E-5's, E-4's, and strikers. At many units you will be the senior subsistence specialist assigned. In these situations, your emphasis will be on supervision rather than food preparation. In other words, your activities will shift from the actual performance of a task (making a pie or cleaning a griddle) to ensuring that the work is done, and done properly. Now, the way to ensure that work is done properly is to train your subordinates, monitor their performance and provide follow-up training. Clearly, TRAINING is the most important responsibility of a supervisor.

TRAINING

The training program which you establish for SS personnel should be divided into two parts; i.e., formal and informal. Formal training consists of any service school which you send your people, the correspondence course provided by the Institute or other organizations, and classroom training that you might provide at the unit. Informal training, often referred to as on-the-job training, is achieved when you use daily situations to demonstrate a point. For example, if you notice a person swabbing the galley with only one bucket of water, stop him and show him the correct procedure (two-pair method). There are two advantages to this: first, it teaches the person the correct method and second, it reinforces your high standards. If you permit the person to continue the incorrect procedure, he and others will notice this oversight and interpret it to be either poor leadership or a decline in standards.

Here are some tips on effective training. These guidelines should be incorporated into all formal and informal training situations.

- Set realistic performance standards which your personnel can understand.
- Realize that learning takes time.
- Speed up the learning process by praising when warranted. Encouragement is oil to the wheels of the mind!
- Build good morale by getting your people to understand that they are a vital part of the food service team. Help them recognize that their jobs are important.

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- Recognize different mental and physical capacities.

- Adopt the principle that each job is a stage in training for a more responsible assignment.

"NO SWEAT" TRAINING

Training is not as difficult as you may think. When a new subsistence specialist reports aboard, tell him exactly what is expected and make sure he understands why he is being taught. If possible, give him a written job description and provide basic guidelines. Use the following method to teach him how to do a specific task, such as operating a piece of equipment:

- Prepare the trainee (tell him how to do the job).

- Demonstrate the correct technique (show him how to do the job).

- Have him perform the job while explaining to you what he is doing.

Time spent in training people to perform will save time and headaches in the long run.

"FOLLOW-UP TRAINING"

Follow-up training is conducted to improve on-the-job performance. It may be limited to additional instruction or assistance in a specific aspect of the job. Follow-up on daily performance is the true measure of effective training: closely observe on-the-job performance and offer constructive criticism when necessary. Repeat training in any specific area of the SS's performance that appears weak and continue to encourage and assist him until he performs the job efficiently.

CONCLUSION

Once again, training is the most important part of supervision. The information provided in this assignment will give you some idea of "how" to train. The "no-sweat" method described above is easy and effective. However, knowing how to train will not do you any good unless you know how to do what you want to teach others to do. The remainder of this pamphlet contains "how to" information and performance standards which should enable you to perform the following supervisory tasks:

- Ensuring good service and personal cleanliness among food service personnel.

- Ensuring that proper dishwashing procedures are utilized.

- Ensuring that the proper procedures for cleaning food service equipment are utilized.

INDIVIDUAL TRAINING RECORD

Topic	Military	Professional	On-the-job Training	Date

Figure 1-1. - Sample Individual Training Record.

SELF-QUIZ #1

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PLEASE NOTE: Many students study ONLY the self-quizzes and pamphlet review quiz, thinking that this will be enough to pass the End-of-Course Test. THIS IS NOT TRUE. The quizzes are to help you in reviewing the assignment. They are NOT a source for EOCT question. To pass the End-of-Course Test, you must study all the course material.

1. What is the most important responsibilty of a supervisor? _____

2. Describe the "three-step" method used to train newly-assigned personnel to perform a specific task.
   a. _____
   b. _____
   c. _____

3. Why is follow-up training necessary? _____

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ANSWERS TO SELF-QUIZ #1

Following are the correct answers and references to the text pages which cover each question and correct answer. To be sure you understand the answers to those questions you missed, you should restudy the referenced portions of text.

1. Training is the most important responsibility of a supervisor. (Page 1-1)

2. The "three-step" method used to train newly-assigned personnel to perform a specific task is: (Page 1-2)

   a. Tell the individual how to do the job.
   b. Show the individual how to do the job.
   c. Have the individual do the job.

3. Follow-up training is necessary to improve performance. (Page 1-2)

Reading Assignment:
Pages 2-1 through 2-9

OBJECTIVES

To successfully complete this assignment you must study the text and master the following objectives:

1. Cite the minimum health standards which are required for personnel working in food service areas.
2. Cite the two instances for which food service personnel must have physical examinations.
3. List the six instances when food service personnel must wash their hands.
4. Describe the proper uniform to be worn by food service personnel.
5. Cite the publication outlining use of, or restriction of, tobacco products in dining facilities.
6. Cite the six primary points which should be checked when inspecting food service personnel.
7. Cite the grooming standards for both male and female food service personnel.

INTRODUCTION

Food service personnel are a most important link in the transmission of food-borne illnesses. The health and personal habits of food service personnel, in addition to the methods of preparing and serving foods, are vital factors. These factors affect not only food service personnel, but also the health and well-being of their shipmates.

The practice of good personal hygiene and the application of recommended food service techniques are essential in preventing food contamination which may result in food-borne illnesses. Food service personnel, both military and civilian, shall receive formal training before assignment to duty in a food service establishment. Supervisors shall insure that these personnel receive a thorough indoctrination in recommended food service techniques and the importance of high standards of personal cleanliness. Food prepared and served in a recommended sanitary manner will prevent most food-borne illnesses.

Food service personnel (such as messmen, scullery, and wardroom personnel) shall be selected on a basis of good health habits and cleanliness and not haphazardly assigned.

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HEALTH STANDARDS

All food service personnel, military and civilian, shall be examined and determined to be free from communicable disease prior to initial assignment in food service areas. Additionally, a medical history shall be completed. The physical examination shall be recorded on SF-93, Report of Medical History.

Subsequent physical examinations shall be conducted ANNUALLY and the results recorded on SF-88. The physical examination report shall be forwarded for review by the appropriate district commander.

At a minimum, physical examinations of food service personnel shall include:

- Chest X-ray
- Purified Protein Derivative (PPD) tuberculin test
- Serology
- Examination of stool specimen for ova and parasites

Health records shall be reviewed to insure that all required immunizations are up to date.

Food service personnel having open lesions, particularly on the hands, neck, or face, or acne of the face shall be prohibited from performing food service duties.

Food service personnel who have been away from their duties for thirty (30) days or more for non-medical reasons shall have a physical examination by a medical department representative prior to resumption of duty.

Food service personnel who have been away from their duties for three (3) or more days as a result of illness shall be examined by a medical officer or the medical department representative prior to resumption of food service duties to insure that they are fit for duty. The results of this examination shall be recorded on SF-600, Chronological Record of Medical Care.

Food service personnel who exhibit any symptoms of communicable disease or other illness shall be referred to the medical department by their supervisor prior to performing daily food service duties.

PERSONNEL INSPECTIONS

Daily inspections of food service personnel shall be conducted by the medical department representative and other personnel designated by the commanding officer.

Inspection of food personnel shall insure the following:

- Uniforms clean and neat
- Hair properly trimmed and clean
- Moustaches (if worn) shall be neatly trimmed
- Hands clean with fingernails clean and neatly trimmed
- No open lesions on the face, neck, arms, and hands, except for minor cuts and abrasions
- No obvious symptoms of upper respiratory infections

PERSONAL CLEANLINESS

Food service personnel shall thoroughly wash their hands and exposed portion of their arms with soap and warm water:

- Before starting work
- During work as often as necessary to keep them clean
- After smoking
- After eating
- After drinking
- After using the toilet

Food service personnel shall keep their hands clean and shall keep their fingernails clean and neatly trimmed.

All male food service personnel working in food preparation, storage, and utensil cleaning spaces shall conform with the following grooming standards:

If an individual chooses to wear sideburns, they will be neatly trimmed. Sideburns will not extend below the bottom of the earlobe, will be of even width (not flared) and will end with a clean-shaven horizonal line. "Muttonchops", "Ship's Captain", or similar grooming modes are considered to be merely elongated sideburns and thus are not authorized.

For sanitary reasons, all food service personnel shall remain CLEAN-SHAVEN, except that they may wear a neatly trimmed moustache. Beards of any kind or shape are PROHIBITED.

All female food service personnel working in food preparation storage, and utensil cleaning spaces shall conform with the following grooming standards:

- Hair will be clean and neatly arranged. In no case shall the bulk of the hair interfere with the proper wearing of sanitary headgear.

- Hair ornaments such as ribbons will not be worn. Pins, combs, or barrettes similar in color to the individual's hair color may be worn but must not interfere with wearing of headgear.

- Hairpieces or wigs, if worn, shall not interfere with the proper performance of food service duties and shall not present a safety hazard.

Food service personnel, military and civilian, shall use effective hair restraints, i.e. properly worn hats and hair nets, to prevent contamination of food and food contact surfaces.

CLOTHING

- All clothing worn by food service personnel shall be neat and clean.

- Food service personnel shall wear whites or Coast Guard blue working uniform.

- Food service personnel shall wear a white bib apron and a white sanitary disposable hat.

- Food service personnel shall wear shoes with steel safety toes.

- The outer clothing of all food service personnel shall be clean and shall not be worn outside of the food service establishment.

- Clothing intended to be used once and then discarded is permissible. All other clothing shall be washable.

- Civilian clothing shall not be kept in food preparation areas, serving areas, and utensil washing areas. Also, food service personnel shall not use these same areas for changing their clothes.

HEALTH PRACTICES

Food service personnel shall consume food only in designated dining areas. An area shall not be designated as a dining area if consuming food or beverages there might result in contamination of other food, equipment, utensils, or other items needing protection.

Food service personnel shall not use tobacco in any form while engaged in food preparation or service, nor while in equipment or utensil washing areas. Food service personnel may use tobacco and tobacco products only in designated areas. An area shall not be designated for that purpose if the use of tobacco might result in contamination of food, equipment, or other items needing protection.

Food service personnel shall handle soiled tableware in a way that will reduce contamination with their hands.

Food service personnel shall maintain a high degree of personal cleanliness and shall conform to proper hygienic practices.

Food service personnel shall not store personal items, such as books, medications, magazines, combs, clothing, etc., in any food service preparation or serving areas, storage, and utensil cleaning spaces.

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Food service personnel shall not handle money, and prepare or serve food as one delegated function.

TRAINING AND SAFETY PRACTICES

Injuries and health impairments can be kept to a minimum through the use of proper training and safety precautions. Most accidents which occur in food service establishments can be prevented if the full cooperation of food service personnel is gained and vigilance is exercised to eliminate unsafe conditions and unsafe acts. All food service establishments are required to conduct effective and continuous training and prevention programs. The commanding officer is responsible for administration of the food service training and safety programs.

EDUCATING PERSONNEL

The commanding officer shall insure that all food service personnel are indoctrinated in the principles of safety and sanitation, and that a continuing and effective training program is carried out. Food service personnel shall be thoroughly indoctrinated in personal hygiene, as well as in the methods and importance of preventing food-borne illnesses. Temporary food service personnel shall also be indoctrinated as they are assigned to food service duties.

Written instructions for equipment operation and standing sanitary rules shall be posted in conspicuous places. Handwashing posters (Forms CG-3525, CG-3526, and CG-3527) shall be posted in heads and other appropriated places. Handwashing posters can be procured from Coast Guard Supply Center, Brooklyn, New York by completing a Multiuse Standard Requisitioning/Issue System Document (SF-344).

(1) CG-3525 - Poster, Sanitation, Man Washing Hands - "Always Wash Your Hands After Using The Toilet", SN 7530-00-F01-4600, U/I EA.

(2) CG-3526 - Poster, Sanitation, Five Hands - "Always Wash Your Hands After Using Toilet", SN 7530-00-F01-4610, U/I EA.

(3) CG-3527 - Poster, Sanitation, Hand Turning Faucet - "Always Wash Your Hands After Using Toilet", SN 7530-00-F01-4620, U/I EA.

NOTE: The information contained in this reading assignment was taken from chapter 3 of the Food Service Sanitation Manual (COMDTINST M 6240.4).

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DAILY SHOWER

FOR HEALTH AND CLEANLINESS

CLEAN CLOTHES

INSIDE AND OUTSIDE

FREQUENT HANDWASHING

VERY IMPORTANT

CLEAN SHORT NAILS

REDUCE DISEASE TRANSMISSION

HAIR CONFINED–WASHED

CAP NET

Figure 2-1. - Good Daily Health Habits for Food Service Personnel

2-5

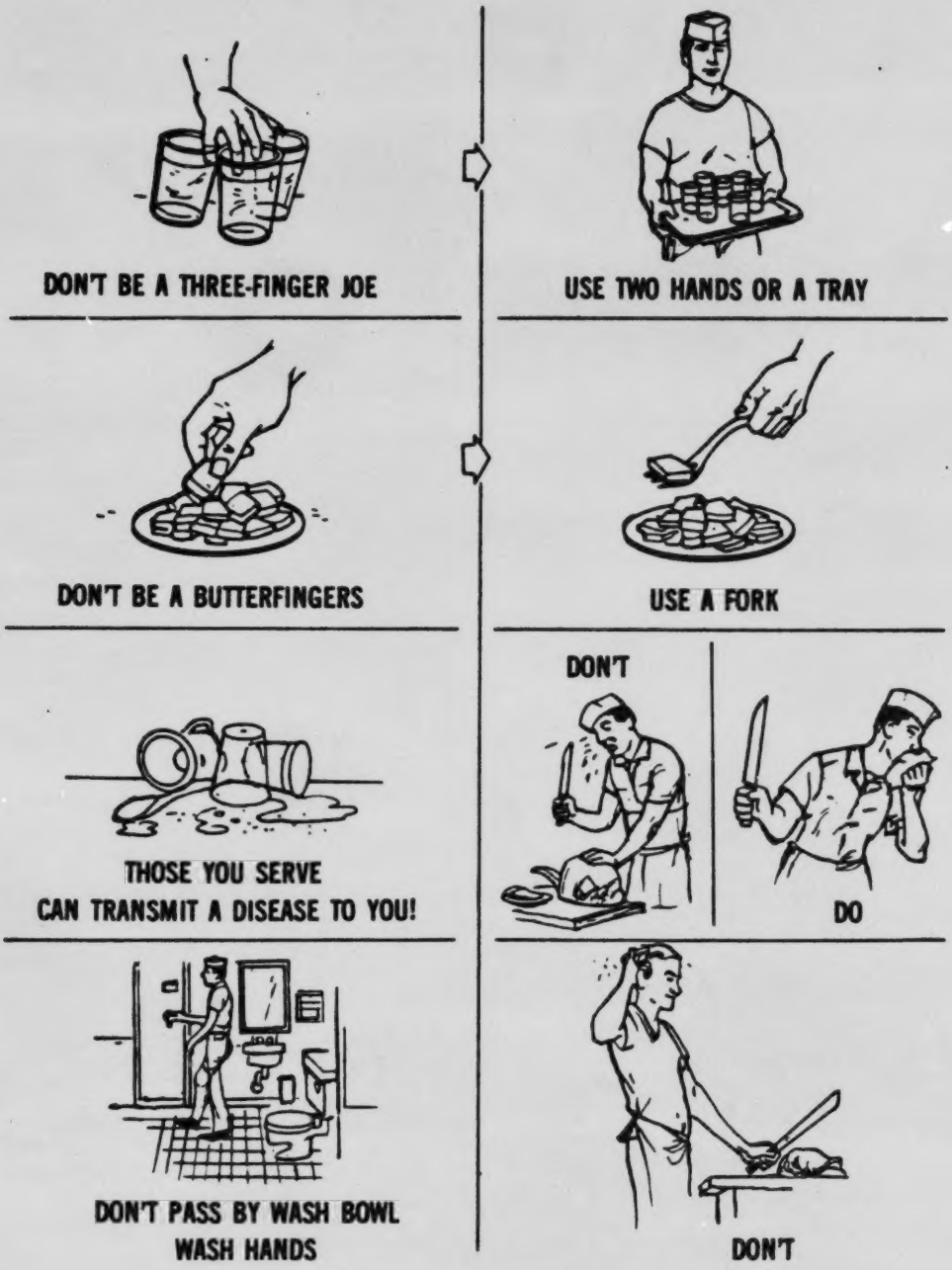

Figure 2-2. - Develop and Practice Correct and Safe Work Habits

Do not handle food if you have infected cuts or sores or if you have an intestinal disease
Always wash your hands after using the toilet
UNITED STATES COAST GUARD
DEPARTMENT OF TRANSPORTATION, U.S. COAST GUARD, CG-3525 (REV. 4-67)
U.S. GOVERNMENT PRINTING OFFICE: 1964 O-306758

Figure 2-3. - CG-3525

2-7

Do not handle food if you have infected cuts or sores or if you have an intestinal disease
ALWAYS WASH YOUR HANDS AFTER USING THE TOILET
UNITED STATES COAST GUARD
DEPARTMENT OF TRANSPORTATION, U.S. COAST GUARD, CG-3526 (REV. 4-67)
GPO 950-729

Figure 2-4. - CG-3526

Do not handle food if you have infected cuts or sores or if you have an intestinal disease
ALWAYS WASH YOUR HANDS AFTER USING THE TOILET
UNITED STATES
COAST GUARD
TREASURY DEPARTMENT, U.S. COAST GUARD, CG-3527 (1-60)
★ U.S. GOVERNMENT PRINTING OFFICE: 1960 O-540260

Figure 2-5. - CG-3527

SELF-QUIZ #2

PLEASE NOTE: Many students study ONLY the self-quizzes and pamphlet review quiz, thinking that this will be enough to pass the End-of-course Test. THIS IS NOT TRUE. The quizzes are to help you in reviewing the assignment. They are NOT a source for EOCT question. To pass the End-of-course Test, you must study all the course material.

1. Prior to being assigned food service duties, all personnel must pass a standard Coast Guard physcial examination, receive all required immunizations and be free of _____.

2. Two instances where food service personnel are required to have a physical examination are:
   (1) _____
   (2) _____

3. Six instances when food service personnel must wash their hands are:
   a. _____
   b. _____
   c. _____
   d. _____
   e. _____
   f. _____

4. Two uniforms prescribed for wear by food service personnel who are on duty are:
   (1) _____
   (2) _____

5. While on duty, what type of shoe must be worn by food service personnel?

6. In addition to the prescribed uniform, what two articles of clothing must be worn by food service personnel while on duty?

7. What Coast Guard directive outlines sanitary regulations for food service personnel?

8. The six points that must be checked during the daily inspection of food service personnel are:
   a. _____
   b. _____
   c. _____
   d. _____
   e. _____
   f. _____

9. True or False: Food service personnel are permitted to wear beards and "muttonchop" sideburns.

10. True or False: Female food service personnel are NOT permitted to wear hairpins, combs and barrettes.

ANSWERS TO SELF-QUIZ #2

Following are the correct answers and references to the text pages which cover each question and correct answer. To be sure you understand the answers to those questions you missed, you should restudy the referenced portions of text.

1. Prior to being assigned food service duties, all personnel must pass a standard Coast Guard physical examination, receive all required immunizations, and be free of open lesions. (Page 2-2)

2. Two instances when food service personnel are required to have a physical examination are: (1) When they have been away from their duties for thirty days or more for non-medical reasons, (2) When they have been away from their duties for three or more days as a result of illness. (Page 2-2)

3. Six instances when food service personnel must wash their hands are: (Page 2-2)

   a. Before starting work
   b. During work as often as necessary to stay clean
   c. After eating
   d. After smoking
   e. After drinking
   f. After using the toilet

4. The two uniforms prescribed for wear by food service personnel who are on duty are: (1) Whites, (2) CG blue working. (Page 2-3)

5. While on duty, food service personnel must wear shoes with steel safety toes. (Page 2-3)

6. In addition to the prescribed uniform, food service personnel must wear a white bib apron and a white sanitary disposable hat. (Page 2-3)

7. The Food Service Sanitation Manual (COMDTINST M6240.4) outlines sanitary regulations for food service personnel. (Page 2-4)

8. The six points that must be checked during the daily inspection of food service personnel are: (Page 2-2)

   a. Cleanliness of uniforms
   b. Cleanliness and trimming of hair
   c. Trimming of moustaches
   d. Cleanliness of hands and fingernails
   e. Existence of open lesions on the face, neck, arms and hands
   f. Symptoms of upper respiratory infections

9. False. Food service personnel are NOT permitted to wear beards and "muttonchop" sideburns. (Page 2-3)

10. False. Female food service personnel ARE permitted to wear hairpins, combs and barrettes. These items must be similar in color to the individuals hair and must not interfere with the wearing of headgear. (Page 2-3)

TRAINING AND SUPERVISION: SANITATION OF EQUIPMENT

Reading Assignment:
Pages 3-1 through 3-60

OBJECTIVES

To successfully complete this assignment, you must study the text and master the following objectives:

1. Identify, by name and appearance, the following cleaning brushes, and explain uses for each:
   a. Counter
   b. Wall
   c. Draftsman's
   d. Open-end tube
   e. 36-inch kettle
   f. 26-inch draw-off
   g. Baker bench
   h. Radiator
   i. All-plastic pot and pan scrub
   j. All-plastic general utility scrub
2. Cite the two general classes of cleaning compound.
3. Name the one cleaning agent that is absolutely prohibited.
4. Name the compound used for descaling dishwashing machines.
5. Explain why soap should never be used in the dishwashing machines.
6. Cite wash and rinse water temperatures for dishwashing machines.
7. Describe procedures for operating a double-tank dishwashing machine.
8. Cite wash and rinse water temperatures for manual (hand) dishwashing.
9. Name the accessory equipment for manual dishwashing.
10. Cite procedures for manual dishwashing.
11. Cite the method for drying hand-wash eating utensils.
12. State the purpose of cleaning food service utensils and equipment.
13. Explain the procedures for cleaning stainless steel.
14. Explain the procedures for cleaning steam-jacket kettles.

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15. Explain the procedures for routine daily cleaning of deep-fat fryers.

16. Describe procedures for cleaning ovens.

17. Describe procedures for cleaning griddles.

18. Cite procedures for destaining coffee urns.

19. Describe procedures for cleaning milk dispensers.

20. Cite procedures for descaling dishwashing machines.

21. Explain how to properly store clean cooking and eating utensils.

22. Explain the procedure for daily maintenance of the Gaylord Ventilator aboard ship.

CLEANING AND SANITIZING SUPPLIES

INTRODUCTION

The object of cleaning food service facilities, equipment, and utensils is to remove food and other soils that promote bacterial growth. Removable soils may be divided into several distinct types:

- Fresh soil, or that which is seen after immediate use.
- Thin film, or soil remaining as the result of ineffective cleaning. It may be seen also after a flushing with plain water. Thin films may be difficult to detect, yet will sustain germ life.
- Built-up deposits, or that caused by ineffective day-to-day cleaning methods that result in an accumulation of soil. Minerals become incorporated with the various food materials, resulting in hard, difficult-to-remove soil.
- Dried deposits, or an accumulation that results from drying of a heavy, crusty deposit baked onto equipment at high dishwashing or sanitizing temperatures. High heat burns deposit materials onto equipment surfaces.

Sanitation simply means the application of treatment designed to destroy remaining bacteria after cleaning. Unclean equipment will be inadequately sanitized because sanitizers do not act effectively in the presence of soil. Germs gain entrance to food when it is in contact with unclean equipment. The bacteria involved may not always be the type that creates illness, but many do impart undesirable flavors and/or odors. Removing and destroying the unseen bacteria are just as important as removing the visible soil.

The preceding discussion on cleaning and sanitizing indicates why all equipment and the physical plant itself should be freed of soil and sterilized. The next step is a consideration of supplies and the methods used to accomplish sanitation.

FACILITIES AND SUPPLIES

Selection and use of proper cleaning and sanitizing materials for specific types of jobs are essential to effective cleanliness, personnel safety, and economy.

The cleaning and sanitizing products procured may be grouped according to their functions. The following list represents such a grouping:

Cleaning compounds:
- Dishwashing compounds
- Soaps
- Synthetic detergents

Polishing compounds:
- Funiture polish
- Metal polishes
- Scouring powder
- Scouring pads and bricks
- Waxes

Sanitizing agents:
- Removers,wax
- Stain remover
- Descaling compound

Cleaning tools

Miscellaneous cleaning materials:
- Sweeping compounds
- Cleaning-solution materials

One must consider the following factors when selecting a method of cleaning and choosing proper cleaning compounds:

- The nature of the dirt.
- The nature of the surface to be cleaned.
- The nature of the water to be used.
- The nature of the detergent or cleaning agent.

WATER HARDNESS

Water is the most essential of all materials used in cleaning. It is the medium that dissolves and energizes the cleaning power of detergents, and it is the carrier that transfers heat to clean and sanitize equipment.

Causes and effects

The mineral elements that make water soft or hard are of primary importance to effective cleaning operations. Water is judged hard or soft by a chemical analysis that determines the amount of calcium carbonate present.

The use of hard water in the best types of cooking equipment can ruin the unit and require expensive repairs. The hard-water problem and methods of overcoming it must be understood in order to protect such equipment as coffee urns from the serious effects of lime deposits owing to hard water. When hard water is heated, the dissolved minerals precipitate; that is, they no longer remain in solution but deposit as solid matter on the interior walls of the container being heated. Equipment with heating elements having these deposits of lime or scale causes one or both of the following problems:

POOR HEAT CONDUCTION: Heat transfer from the heating element to the water is slowed down considerably. It may increase heating time by five times. Lime coating acts as an insulator. Heat, generated from the steam coil or electric heating element, may cause either the burning out of heating elements or the loss of operational efficiency. High temperatures caused by the insulating layer of scale may change the structure of the metal in the bottom of the urn and result in cracking and leakage. Droplets of water evaporate from the leaks, leaving yellow or white streak deposits on exterior surfaces.

CORROSION AND WEAR OF FITTINGS: Soft solders or white leads, used in making fittings watertight, corrode as soon as a leak develops. Particles of scale seep into the drawoff system of coffee urns and clog and score faucet and valve seats, spray heads, and safety valves. Faucets may drip.

Removal of Lime and Mineral Deposits

If possible, remove lime deposits without completely dismantling the equipment by flushing out the system at the end of each service period. The manual cleaning operation for the removal of hard-scale formation is described later in "Food Service Equipment Sanitation." Concentrated, strong acids should not be used to remove lime scale. These may affect the metal and fittings inside the equipment.

Mineral deposits from hard water in dishwashing machines deter proper cleaning and rinsing operations. If water is sufficiently softened by the addition of detergents of correct composition and quantity, this difficulty will not occur. Each activity

ashore should be aware of the hardness of the water supply and take corrective action accordingly.

One of the ingredients included in properly compounded detergents is intended to soften water. These materials act more effectively at certain temperatures. Handwashing compounds are formulated to act effectively at wash temperatures employed in hand washing. Machine dishwashing compounds contain materials that are more active and effective at higher temperatures.

CLEANING COMPOUNDS

There are two general classes of cleaning compounds: soaps and detergents. These are synonymous terms in the sense that both are cleaning agents. Soap is a good detergent, but not all detergents are soap. Soaps for many years were the most universally used detergent; however, because soap has limitations, synthetic detergents have become more widely accepted.

Synthetic Detergents

Synthetic detergents have the following characteristics, which make them superior as cleaning compounds:

- Performance not affected in hard water.
- More soluble than soap.
- Lesser quantity required for sudsing.
- Will not form a precipitate in water.
- Can be used in water which has high salt and acid or alkaline content.

See Figure 3-1 for information on standard soaps and detergents.

Detergents on the market today may be grouped according to the work they do. There are three major categories.

NEUTRAL TYPE: These are a powder or flake material containing no abrasives or fatty acid soaps. Synthetic detergents (nonionic), also called wetting agents, are of this type. These are used in manual cleaning to promote wetting when other detergents are not efficient. Other uses include the rinse injector operation in mechanical dishwashing and as described below.

ALKALINE TYPE: Alkalies perform very useful functions as detergents. Used alone, alkalies have poor wetting and emulsifying properties. Wetting agents (nonionic) detergents) will aid in this respect. All surfaces to be cleaned, regardless of type, must become wet to be cleaned properly. Water alone, as well as many detergent-water solutions, has poor wetting properties; therefore, tiny crevices in and around soil deposits on a surface do not get wet. Displaced soil must be held in suspension to be floated off and removed from a soiled surface. Therfore, alkalies must contain some soap or detergent, or detergents must contain some alkali, to produce good cleaning action.

Alkaline detergents are widely used for routine and heavy-duty cleaning. These detergents are more effective in the removal of fats, proteins, and heavy soil. The dishwashing compound used by the Coast Guard general mess is highly alkaline. In solution, this will emulsify greasy food residues and, if used in proper proportions according to water hardness or softness, will never leave film on dishes or coat the inside of the dishwashing machine with hard calcium deposits.

Dishwashing compounds are procured primarily for use in machines, but this compound may be used in cleaning solutions as a source of alkalinity and in other heavy-duty cleaning operations. Because the compound contains strong alkalies, it is imperative that contact with skin be avoided. The proper amount of dishwashing compound to use in any cleaning operation should be carefully plotted to avoid waste and to increase efficiency of the operation. Too much detergent is as bad, if not worse, than too little.

Manual dishwashing detergents are a special type used for several cleaning problems. For most cleaning operations, ¼ to ½ ounce of detergent in a gallon of fresh water or sea water, preferably hot, is sufficient. Heavier soils may require as much as 1 ounce of the product. For some applications, the addition of 1 to 2 ounces of an alkali, such as sodium metasilicate, or machine dishwashing compound, will improve performance. If

FSC group	Name	Description	Recommended use
79	Detergent, general-purpose	Liquid, water soluble, concentrated strength	For general maintenance cleaning, such as removing dirt from floors, walls, ceilings, and equipment.
79	Detergent, general-purpose, nonionic	Liquid, water soluble	For hand dishwashing. For preparing cleaning solutions that can be rinsed in fresh or salt water. Use to remove grease, oil, and dirt from surfaces of different kinds.
79	Detergent, general-purpose, nonionic	Liquid, oil soluble.....	Dissolves in kerosene, diesel fuel oil, high-flash coal tar naphtha, and similar hydrocarbon solvents. Can be rinsed in fresh or salt water. Use to remove grease and oil sludge from a variety of surfaces. Some types of rust-preventive compounds and other similar soils respond to this compound.
79	Dishwashing compound, hand	Flake. May be used with hard or soft water	For manual dishwashing in sinks. A neutral synthetic detergent.
79	Dishwashing compound, machine	Granular or powdered, hard or soft water types	For machine dishwashing. Use in deck cleaning solutions.
79	Soap, laundry.....	Bar, 25 percent max. rosin	Intended for soft to moderately hard waters for general cleaning and washing.
79	Soap, laundry.....	Powder.....	Neutral soap intended for general-purpose cleaning in soft water.

Figure 3-1. - Cleaning Compound.

alkalies are used, the solution should be prepared with fresh water. Scrub, mop , or wipe the solution into the oily soil, and then rinse away the loosened soil with either fresh water or sea water. Cold-water rinsing is satisfactory, but hot water may be used when it is desired to have steel surfaces dry quickly.

Pots and pans may be placed in a warm oven to eliminate moisture from the pan's folds and crevices.

ACID TYPE: Acids are combined with detergent in compounds for special cleaning purpose, such as removing rust, scale, and other deposits on metal surfaces. These are essentially mineral deposits. Phosphoric acid descaling solutions for dishwashing machines and bread pans are of this type.

Soaps

Soaps have valuable properties for certain cleaning operations; however, they have limitations for other uses. Soap should never be used in dishwashing machines because the excessive sudsing will clog spray arms and coat eating utensils and inner walls of dishwashing machines.

Use liquid soap in dispensers in locker rooms, toilets, and areas adjacent to galleys for hand washing.

POLISHING COMPOUNDS

There is a wide range of products suitable for polishing and cleaning. Selection of proper products is important because unsuitable ones scratch or permanently etch surfaces of counters or equipment. When irreparable damage occurs, cleaning is more difficult. The use of metal polishes on food-contact surfaces is prohibited.

Polishing compounds do vary widely in function and use; yet, there is a characteristic common to this broad group of products. There are stable mixtures of insoluble materials such as oils, waxes, or abrasives dispersed in water or organic solvents. Scouring bricks and pads are an exception, for the abrasive material they contain is not in solution until the actual mechanical cleaning operation begins.

The compounds listed in Figure 3-2 have specific uses as indicated.

SANITIZING AGENTS

Two names applied to chemicals that kill pathogenic organisms are germicides and sanitizers. These will destroy harmful bacteria if properly used on thoroughly cleaned surfaces. Several types of sanitizers are available to activities; all are effective, but some are easier to use than others.

Heat (hot water and steam) is preferred as a means of sanitizing most food preparation and service equipment. Small general mess operations or larger messes having equipment that is either stationary or too large to go through the dishwashing machine may sanitize with chemicals instead of steam or hot water. Figure 3-3 lists chemical sanitizers. Methods of sanitizing are discussed later.

SOLVENTS

A group of compounds called solvents, used to remove heavy deposits of minerals on the inside of equipment or burned carbon on the outside, should be used with caution; directions given by the manufactures should be carefully followed. Figure 3-4 gives descriptive and useful information about these products.

CLEANING TOOLS

There are many kinds of tools standardized for use in different cleaning operations. It is essential to select a brush, for example, of the proper size and construction, made with bristle materials that eliminate possible damage to the surfaces being cleaned. See Figure 3-5 for a list of brushes and other cleaning tools that have specific cleaning functions. Figure 3-6 lists various types of brushes used for cleaning in operation of the Coast Guard general mess.

Brooms, brushes, mops, and sponges require cleaning and sanitizing. Mops, buckets, and wringers should be rinsed out immediately after use, allowed to drain, and then sanitized. Store buckets upside-down. Mops must be washed thoroughly after each use with fresh, hot detergent water, and rinsed in clean hot water to which a sanitizing agent has been added. Thoroughly wring out the

FSC group	Name	Description	Recommended use
79	Pads, scouring	Nylon web with permanent abrasive	Pots and pans and other cooking utensils. Also suitable for general-purpose cleaning.
79	Polish, metal	Liquid	Suitable for cleaning and polishing copper, brass, nickel, chrome, and similar metals (not for use on tableware).
79	Polish, metal	Liquid	For cleaning silver and silver-plated articles.
79	Scouring brick (pumice stone) and holder	Oblong blocks used with holder	For scouring and cleaning burned food and carbon from griddles and grills.
79	Scouring powder	Fine textured, mild abrasive with detergent without bleach	Highly polished surfaces (glass, tile, or other glass-like surfaces).
79	Scouring powder	Gray powder with detergent without bleach, abrasive	Contains abrasive suitable for porcelain surfaces; general galley equipment, floors. NOT RECOMMENDED for stainless-steel surfaces.
79	Soap, scouring	Cake, ground feldspar	Glass or enamel surfaces or other fine cleaning.
79	Soap, scouring	Cake, grit, ground quartz	Used on pots and pans for rough work.
79	Wax, floor	Water emulsion, slip-resistant	Free-flowing liquids for tile (rubber asphalt) or linoleum floors. Not to be used on wood.

Figure 3-2. - Polishing Compounds.

FSC group	Name	Description	Recommended use
*66	Calcium hypochlorite solution*	70 per cent available chlorine	For disinfecting and deodorizing galley and mess equipment.
79	Detergent-sanitizer	Liquid, all-purpose concentrate	Cleaning in buildings.
68	Disinfectant, germicidal and fungicidal	Liquid, iodine-type disinfectant	Sanitizing all types of cooking and serving equipment.
68	Sodium hypochlorite solution	5 or 10 percent liquid chlorine solution	General use in disinfecting and deodorizing galley and meat equipment.
68	Disinfectant, food service	Chlorine, iodine type. Easy to use. No safety or storage problems	Sanitizing all types of cooking and serving equipment and fresh fruits and vegetables (locally grown).

*Calcium hypochlorite solution, highly flammable, should be used only when disinfectant, food service, is not available. Obtain the solution from the engineering department and the proper "use" instructions from the medical department.

Figure 3-3. - Chemical Sanitizers.

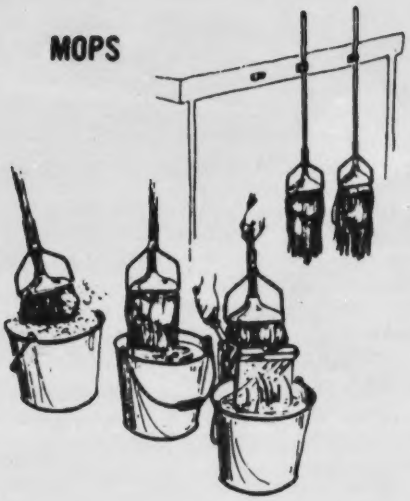
FSC group	Name	Description	Recommended use
68	Cleaning compound, bread baking pan	.....	Removing burned carbon and grease from steel and tinned steel bread pans.
68	Orthophosphoric acid, 85 percent minimum aqueous solution	Clear white, viscous liquid, used in diluted form	Descaling dishwashing machines.
79	Stain remover, tableware (destaining compound)	Granular or powdered form, tank cleaning	Destains coffee urns, plastic table ware, deep-fat fryers (not suitable for aluminum).
79	Stain remover, tableware (1 oz. envelopes)	Powdered, oxygen-releasing	Destains coffee urns, plastic, glass or chinaware (not suitable for aluminum).
79	Remover, water-emulsion-type, floor wax	Liquid, concentrate....	Removes liquid wax.

Figure 3-4. - Solvents.
(Descaling, Degreasing and Destaining Compounds).

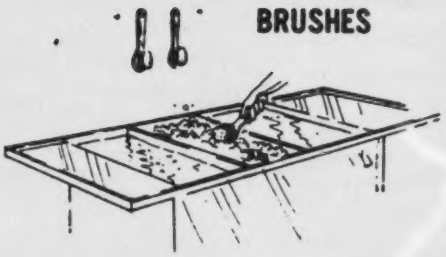
FSC group	Description
79	Broom, push, rattan fiber, floor-sweeping.
79	Broom, upright, corn or corn and fiber mixture, use for light and heavy-duty sweeping.
79	Brush, dusting, for general cleaning, ceiling and wall.
79	Brush, dusting, bakery bench, for use in dusting excess flour in dough makeup.
79	Brush, dusting, radiator, horsetail hair.
79	Brush, floor-sweeping.
79	Brush, cleaning, all-plastic.
79	Brush, injector cleaning; tampico fiber of twisted spiral construction, 30 inches overall; for cleaning pipes and faucets of steam-jacketed kettles.
79	Brush, open-end tube.
79	Brush, scrub, palmetto, with or without detachable handle.
79	Brush, scrub, white tampico; for scrubbing interior woodwork.
79	Brush, wire, scratch, curved handle, shoe handle, stainless-steel wire.
79	Cloth, cleaning, nonwoven fabric.
79	Mop, wet, cotton, fixed handle.
79	Handle, mop, wood.
79	Mophead, wet, cotton.
79	Wringer, mop, squeeze-type.
79	Wringer and bucket, mop, roller-type wringer and bucket.
79	Pad, metal polish impregnated, cotton wadding.
79	Sponge, synthetic.
79	Sponge, natural.
79	Squeegee, floor-type, rubber blade, wood blade holder.
79	Sponges, metal.

Figure 3-5. - Cleaning Tools.

Figure 3-6. - Types of Brushes.



1. Wash thoroughly after use in fresh, hot detergent water.
2. Rinse in clean hot water to which a sanitizer has been added. Wring out.
3. Hang mop to dry thoroughly at least once a day.



1. Wash thoroughly in fresh, hot detergent water after use.
2. Rinse in hot running water; dip in water to which a sanitizer has been added.
3. Shake and hang to dry.

Do NOT allow brushes to rest on bristles. This will cause the bristles to bend and mat.

Figure 3-7. - Care of Mops and Brushes.

water and hang the mop so that it can dry out at least once daily. Open the wringer to allow it to dry also. Do not store mops in food service spaces.

See Figure 3-7 for additional hints on caring for cleaning tools. Brushes that will not be damaged by dishwashing detergent and hot water (180°F) may be run through the machine for cleaning and sanitizing. All-plastic brushes are of this type and can be used for many general cleaning operations. Wire-bristle brushes which do not rust, may be similarly cleaned and sanitized. Other brushes can be hand washed with detergent water, rinsed, and hung to air dry. Brushes will bend and mat if allowed to rest on bristles.

SPONGES ARE PROHIBITED IN THE DINING FACILITY

Metal sponges are useful tools for hard-to-clean surfaces. The metals used to manufacture these sponges vary. Corrosion-resistant steel sponges should be selected to scour surfaces that have a tendency to rust. Metal sponges are longer lasting under heavy-duty cleaning than other types. All food equipment and utensils must be constructed of corrosion-resistant materials in order to withstand repeated scrubbing, scouring, and the corrosive action of cleaning and sanitizing agents, and acid foods. The use of steel wool is prohibited

Disposable cleaning cloths of nonwoven fabric are ideal for cleaning jobs in the galley, serving line, and dining area. In

addition, the durability of these cloths is such that they withstand normal use.

MISCELLANEOUS CLEANING MATERIALS

Cleaning-solution materials should be selected for various jobs, such as for window and ceramic-tile washing and deodorizing refrigerated areas. See Figure 3-8 for a list of such cleaning-solution materials.

Sweeping compounds used in floor maintenance comprise another group of miscellaneous compounds routinely used. These compounds are mixtures of sawdust, sand and mineral oil, and are suitable for use on wood, steel, or nonvarnished floor surfaces. In maintenance of composition floors where sand and oil are undesirable, a sawdust-wax base should be used. Concrete, wood, and steel floors require a sweeping compound that contains silica minerals, not sawdust, to absorb oil or oil and water mixtures from floors.

FSC group	Name	Description	Recommended use
68	Ammonia, household	Diluted solution of ammonium hydroxide	Cleaning solution for tile and windows.
65	Isopropanol alcohol	Rubbing alcohol	Cleaning windows or glass surfaces.
68	Alcohol, ethyl (denatured)		Solvent for spot removing grease.
89	Soda, baking	Powder	Washing, cleaning, and scouring solutions.
79	Sweeping compound	Sand, sawdust, and wax	An emulsifying agent for floor when oil is undesirable.
		Sawdust and wax	For use on composition floors.
		Absorbent, silica minerals	For use on concrete, wood, or steel floor for maintenance to absorb oil or oil and water mixtures.

Figure 3-8. Miscellaneous Materials

CLEANING AND SANITIZING FOOD SERVICE AREAS AND EQUIPMENT

METHODS AND DIRECTIONS FOR SANITATION OF FOOD SERVICE SPACES

Galleys, bake shops, meat and vegetable preparation areas, mess halls, food storage and refrigeration facilities, and any other facilities or equipment in which food is prepared, served, or dispensed constitute the total physical plant of the food service operation. Methods for maintaining consistently excellent sanitation throughout the entire food service area are given below.

PORCELAIN OR TILE SURFACES

Special cleaning is required periodically to keep porcelain and/or tile surfaces clean and gleaming. An all-purpose cleaner-detergent is suitable for this type of work. Wash or scrub, if necessary, all surfaces with the cleaner; then rinse and wipe dry.

If greasy or mineral films appear, use a destaining compound to remove. Rinse and wipe dry. Daily use of this compound should not be necessary. If water spots, fingermarks, or streaks are wiped up daily, dulling deposits will not appear on porcelain surfaces.

BULKHEADS AND OVERHEADS

Vacuum cleaning is the recommended method for drycleaning bulkheads and overheads. Frequent cleaning by machine will prevent grit, lint, and dust from becoming greasy and hard to remove. Complete cleaning includes washing down walls with recommended cleaning solutions, followed by adequate rinsing and sanitizing. Mild detergent solutions are recommmended for cleaning painted surfaces.

If food-preparation and service equipment is properly located, bulkheads and overhead areas are easily accessible for cleaning. Use a wall brush for dusting instead of using a machine cleaner; for wet cleaning and sanititizing, use a clean, sanitized squeegee.

DECKS

Regular after-meal cleanup is necessary to prevent an accumulation of filth, and frequent in-between cleaning is required if deck cleanliness is to be maintained at a peak standard. WHEN FOOD IS SPILLED, IT SHOULD BE WIPED UP IMMEDIATELY.

No attempt should be made to sweep down decks and mess halls during food preparation and service, as dust rises in the air and will fall on food and worktables. Pick-up waste and deposit it in proper receptacles. Sweep decks thoroughly with floor brushes or machine cleaners. Suitable sweeping compounds should be used. Wood shavings should not be used on floors.

Be certain a neutral detergent is used for wet cleaning, because this type does not affect the flooring materials as do strong alkaline materials, rough abrasives, and very hot water. Shipboard galley and bakery decks usually have magnesite or terra cotta coverings that can withstand much heavy-duty wear if there is good maintenance. Improper cleaning materials and methods (such as strong, caustic-base soaps, salt water, rough abrasives, or too hot water) dull colors. NEVER HOSE OR FLOOD COVERED DECKS.

Promptly repairing deck coverings, recementing loose tiles, and repairing faucet leaks prevent accidents and extend wear. If spills are wiped up quickly and excess water is kept off the decks, moisture is less likely to seep under the covering and cause buckling and loosening. Repair leaks to prevent accumulation of water on decks. Never use excess water on deck coverings. It will not be necessary to replace expensive deck coverings often if recommended procedures are followed. The procedure for routine cleaning of decks is given in Figure 3-9.

The recommended method of cleaning concrete floors is as follows:

- Cover oil or grease with oil-and water-absorbent material.
- Wash floor with a fresh-water solution containing a wetting agent.

Recommended method of cleaning: Linoleum tile, Vinyl and vinyl asbestos tile, Rubber terrazzo, Magnesite, Rubber switchboard matting, Ceramic tile, Painted decks	
Steps	**Procedure**
1. Prepare cleaning solution	Use 2 tablespoons hand dishwashing detergent per gallon of warm (not hot) and fresh (not salt) water.
2. Swab	Use a scrubbing machine with circular brush (or stiff-bristle tampico hand brush). Apply a minimum of solution.
3. Rinse	Use clean water and mop. Swab up all water, cleaning solution, and dirt until surface is barely damp.
4. Remove spots	Remove heavy dirt and grease spots using a cloth moistened in mineral spirits.

Figure 3-9. - Directions for Cleaning Decks and Deck Coverings.

VENTILATION SYSTEMS

Good air circulation is a basic requirement of proper sanitation for the following reasons:

- Reduces condensation of steam.
- Minimizes heat, vapors, smoke, fumes, odors, and soiling.

The beneficial effects of fresh air, or a controlled air-conditioning system, in all spaces where there are food service operations, cannot be overemphasized. Mold and bacterial growth are inhibited wherever there is ample, dry, clean air. Smudged bulkheads and overheads are not conducive to proper housekeeping or sanitation. Working conditions are greatly influenced by temperatures, and control of atmosphere is conducive to maximum health of personnel and environmental sanitation.

Hoods

Prevent hood appliances over equipment from accumulating grease, which drips back into food being prepared or onto surfaces of equipment where contamination of food is possible. Filters should be removed and soaked in hot (180°F), strong detergent solution. Scrub with a brush. Rinse under hot running water or by applying steam from hose. Removable filters may be run through the dishwashing machine. Tops of hoods, globes, and wire jacket protectors should be brushed down weekly (or as required) and washed free of grease. Spray sanitizing agent on the hood after cleaning. If there are no facilities to take care of excess waste from spray, rinse the hood off with a sponge dipped into a sanitizing solution. For detailed cleaning instructions of the new Gaylord ventilator hood, see Figures 3-10 and 3-11.

Windows

There are many suitable solutions available for cleaning glass. The major factor in selection of a cleaner is ease of use. To clean all types of glass surfaces, spray the liquid cleaning solution onto the glass and wipe off with a soft cloth or paper towel.

LIGHTING SYSTEM

Sufficient lighting in all areas of food storage, preparation and service, and in scullery operations is a fundamental requirement of proper sanitation and safe working conditions. Grease, dirt, and vermin can be more easily detected and corrected where there is ample light. Lighting in storage areas should be sufficient to read labels and

identify food and supplies. Moreover, inspection of the condition of stored items is greatly facilitated by proper lighting.

Routine cleaning of light fixtures, particularly bulbs, also will contribute to adequate lighting. Remove and clean globes with warm detergent solution to eliminate the accumulation of dirt and grease film. Be certain that surfaces and globe end are absolutely free of water before replacing into electrical sockets. Wipe bulbs with a damp cloth. Do not immerse bulbs in water.

STORAGE AREAS

Fresh and frozen food items are perishable and must receive proper handling in transit and storage to reduce risk to the health and welfare of personnel who prepare and eat foods. During loading and unloading on docks, piers, or onboard, keep areas as clean as possible. Long exposure to weather will hasten spoilage. Daily checks on the sanitation of dry, freeze, and chill spaces are essential. Mold and decay go hand in hand with poor housekeeping. Decks, grating, bulkheads, and overheads should be cleaned, sanitized, and aired as often as practical. Cleaning and defrosting of refrigerated spaces should proceed when stocks are low.

Other fundametal requirements to consider before storage are air circulation, temperature, and humidity. These factors must be controlled to ensure a continuation of optimum storage conditions.

Cleaning equipment (brooms, mops, vacuum cleaners, etc.), as well as supplies used for cleaning and sanitizing, should be stored away from foods of all types. (See Figure 3-12). Temporary local use storage as well as a central storage area must be planned for these supplies. These materials should be clearly labeled and identified for specific uses. Personnel should read labels on all materials prior to use. Supervisors instructing personnel should call attention to information on safety as well as on quantities of supplies to use for specific cleaning jobs. Figures 3-13 through 17 give cleaning and sanitizing instructions for storage areas.

The following is the recommended daily maintenance:

1. Turn off the blower.
2. Turn on the steam or hot water for approximately 10 minutes each day. This time may vary, depending upon the type of equipment and kind of cooking being done.
3. Visual check: A VISUAL check should be made immediately following the steam or hot water cleaning.
   - A. When visually checking the ventilator, manually trip the Gaylord damper control switch and open the inspection clean-out doors, to more adequately check the grease extraction area.
   - B. See if all the grease, dust, and lint have been removed from the interior of the ventilator. If there is an area remaining that has not been adequately cleaned, it indicates one of the spray nozzles has become clogged. If this is the case, remove the offending nozzle cap, clean it with a small wire and replace.
   - C. Manually reset the Gaylord damper control switch.
4. Final cleaning: Wipe the exposed front surface of the movable grease-extracting fire damper baffle and adjacent exposed areas.

THE VENTILATOR IS NOW CLEAN AND READY FOR OPERATION

Figure 3-10. - Gaylord Ventilator System Maintenance (Ships).

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Daily Maintenance and Operation

Starting the ventilator:

1. Before the ventilator will start, all damper-control switches must have the plunger arms pushed in and locked in the reset position.
2. Push the "start" button on the C-100 exhaust control cleaning station to place the ventilator in operation.

Stopping and cleaning the ventilator:

1. Push the "stop" button on the C-100 exhaust control and cleaning station.
   A. Blowers will shut off. (**Note**: Whenever the blowers serving the ventilators are shut off, by pushing the "stop" button on the C-100 exhaust control and cleaning station, the units are automatically cleaned.)

   B. Hot water or (hot detergent water installed on some shore stations) is automatically released into the interior of the ventilator for the length of time previously set on the timer in the C-100 station.
      (1) The adjustable timer in the C-100 exhaust control and cleaning station can be set for a cleaning cycle from 0 to 10 minutes. An average cleaning cycle is approximately 5 minutes.
      (2) At the end of the cleaning cycle, the hot (detergent) water is automatically shut off.
2. After completion of the cleaning cycle, open the inspection doors above the shelf of the ventilator and see if all the grease, dust, and lint were removed from the interior of the ventilator. If there is an area that was not adequately cleaned, it indicates a clogged spray nozzle. Remove the offending nozzle, clean it with a small wire, and replace.
3. Check the main grease gutter and drain (located just below the air entrance of the ventilator) for foreign material.
4. Check the detergent level in the detergent tank (installed on some shore stations). If low, refill.
5. Wipe the exposed front surface of the movable grease-extracting fire damper baffle at the air entrance of the ventilator, as well as other exposed exterior surfaces. When the ventilator is clean, push the "start" button on the C-100 exhaust control and cleaning station to restart the blowers.

The ventilators should be cleaned daily.

The fire-protection system should be periodically checked.

Testing can be accomplished by pushing the remote fire pushbutton switch, duplicating the action of the thermostats.

Note: The remote fire pushbutton switch may be interconnected with the general fire-alarm system. Notify authorities when testing the system.

Figure 3-11. - Gaylord Ventilator System with Automatic Controls (Shore Units).

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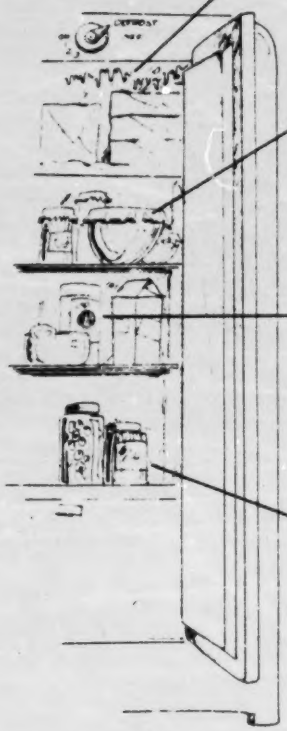
DEFROST BEFORE 1/4 INCH OF ICE FORMS

COVER FOODS

PACK FOOD LOOSELY

NEW FOOD IN BACK



OPEN DOOR ONLY WHEN NECESSARY

THROW AWAY UNUSABLE LEFTOVERS

WASH FREQUENTLY

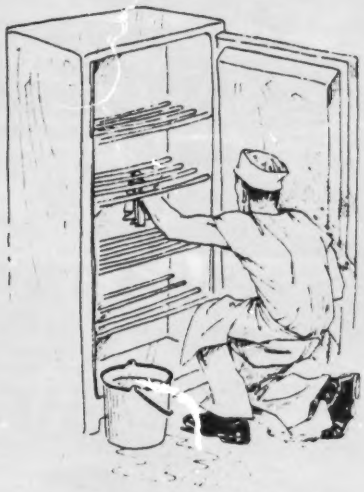


Figure 3-12. - Observe Good Storage Practices.

Weekly cleaning

1. Remove all food from container.
2. Brush out or vacuum to remove dirt.
3. Wash down surfaces that can be wet cleaned with warm detergent water. Rinse; air dry. (Surfaces that can be drycleaned only should be sprayed lightly with sanitizing solution. Air-dry.)
4. Allow all surfaces to dry before placing food back in bins.

Figure 3-13. - Cleaning Dry-Food Storage Spaces (Vegetable Bins, Condiment Lockers, Etc).

Daily

Wipe dry and polish all stainless-steel extensions as described earlier in this assignment.

Biweekly cleaning

1. Transfer all stored foods to protected temporary storage.
2. Remove shelving and loose equipment to wash sink filled with detergent solution. Scrub with plastic bristle brush. Rinse. Sanitize with spray. Leave door open to dry.
3. Scrub interior of box with hot detergent solution, using plastic brush. Clean corners, doors, openings, hinges, and latches. Rinse. Sanitize.

Periodically

Clean vacuum compressor, condenser coils, motor and related areas. (See fig. 6-8 for additional points in proper care of refrigerators.)

Figure 3-14. - Cleaning Reach-In Refrigerators.

Daily cleaning

Wipe up spilled liquids to prevent accidents and to lessen cleaning problems. Pick up scraps and particles as dropped on decks. Swab floor with a sanitizing solution daily.

Weekly

1. Remove food, place in another freeze space immediately.
2. Scrub all walls, boards, and shelving, using good plastic brush.
3. Scrub dunnage with hot detergent water. Rinse with clear water, if possible, or dry at room temperature.
4. Return dunnage to box.
5. Clean drain regularly.
6. Sanitize by spraying shelving area, walls, ceiling, and floors with solution to prevent mold and/or odor development.

CAUTION: Cleaning should be done by wiping surface.

Figure 3-15. - Cleaning Walk-In or Walk-Through Refrigerators (Reefers).

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Step	Procedure
1. Turn off motor	Empty, defrost, and clean. Make certain overflow pipes carry off water used for defrosting.
2. Wash all parts, including ice buckets, scoops, ice-storage bin	Use a plastic bristle brush to scrub inside and outside of bins with mild detergent solution.
3. Rinse	Adequate rinsing should be ensured to preclude bad odors and the accumulation of film deposits from detergents. Water drain should be clear and free to allow proper rinse.
4. Check water control	Clean to prevent clogging of holes of water flow.
5. Reassemble trays and other equipment	Refill trays with water from sanitary hoses or lines.

Note: Occasional descaling operation may be required to prevent a deposit of minerallike substance on freezer board. Additional cleaning may be needed on the inside evaporation shell assembly to remove formation of mineral deposits from water. Frequent inspections of the auger and evaporation shell are necessary to determine if and when to disassemble evaporation shell and apply scale-removing solution.

Figure 3-16. - Cleaning Icemaking Machines.

Step	Procedure
1. Shut off water	Pour 1 quart cleaning solution slowly into water reservoir.
2. Place a container below ice chute in bin and start ice machine	Ice will be formed from cleaning solution. Discard ice. Shut off machine.
3. Flush icemaking system	Add 1 quart clean water to reservoir. Catch ice in container. Discard.
4. Wash down storage bin with mild detergent solution. Rinse	Inside should be scrubbed with plastic brush.

Areas in and around motor, insulation panels, and condenser coils should be vacuumed or blown free of lint and dust. Periodic weekly checks for cockroach infestation should be made.

Directions for cleaning water reservoir

At least once every 30 days, clean out the water reservoir

Step	Procedure
1. Shut off power	Use manual switch.
2. Turn off water supply	Tighten valve on water inlet valve.
3. Remove entire water reservoir from machine	Take out water inlet fittings. Pull out reservoir from top of water inlet.
4. Clean and descale	Wash out reservoir with warm detergent water. Rinse. Use a scale-removing solution if necessary to clean inside of possible sediment.
5. Replace reservoir and reconnect power and water supply	Refill reservoir and adjust water level up to 3/4 inch below top level.

Figure 3-17. - Cleaning Automatic Ice-maker without Unit Disassembly.

DEFROST BEFORE 1/4 INCH OF ICE FORMS

COVER FOODS

PACK FOOD LOOSELY

NEW FOOD IN BACK

OPEN DOOR ONLY WHEN NECESSARY

THROW AWAY UNUSABLE LEFTOVERS

WASH FREQUENTLY

Figure 3-18. - Checkpoints in proper Care of Refrigerators.

DRESSING ROOMS, LOCKERS, AND TOILET FACILITIES

Street clothes and uniforms should never be worn in the galley. Adequate, clean, and orderly facilities should be provided for personnel to keep and change clothing to be worn when performing routine duties in food service operations. Where justified, special uniforms, aprons, and mess caps should be supplied for personnel. These clothing items should be laundered after use and returned to the lockers. Adequate space should be provided for hanging up these pieces of clothing because they can contaminate food, food equipment, and food preparation surfaces.

Dressing rooms or designated areas for changing and storing clothing must be located outside the areas where food is stored, prepared, and served. Dressing areas and lockers must be clean and orderly at all times.

Conveniently located toilet facilities must be accessible to personnel at all times. Plumbing facilities must be completely enclosed and have tight-fitting, self-closing doors. These areas should be adequately equipped with proper waste receptacles, toilet paper, and an approved hand-drying device or sufficient disposable towels. Lavatories shall be located within or immediately adjacent to toilet areas as well as within food preparation areas. These lavatories should be kept in clean and orderly appearance. Soap or detergent supplies with hot and cold running water are required for use by personnel. Because hands are probably the most common vehicle of contamination of food, the importance of effective hand washing cannot be overemphasized. The proper number and location of lavatories will permit convenient and expeditious use by all food service personnel.

FOOD SERVICE EQUIPMENT SANITATION

Repair and maintenance of equipment will be minimal if regular schedules of cleaning after use and daily cleaning are maintained. A few general rules of cleaning and sanitizing apply to all equipment. Make the following applicable to your cleaning, sanitation, and safety program:

- Equipment owner's manuals supplied by the manufacturer should be filed in a handy place for ready reference. These recommend the operational use and servicing of equipment. Adjustment of precision apparatus such as scales should be referred to a qualified serviceman. The manufacturer will specify what parts of motors and equipment should be serviced by professionals.

- Equipment should be cleaned internally as well as externally. Removable parts should be disassembled, washed, and sanitized routinely.

- When food is spilled, it should be wiped up immediately.

- Cleaning of equipment immediately after use will take less time, and the job will be easier. If cleaning will be delayed, equipment such as steam kettles and mixing-machine bowls should be filled with water immediately to soak off hard-to-remove food.

- Use specific cleaning, sanitizing, and polishing materials for specific jobs on each piece of equipment as indicated in the preceding discussion.

Galley and baking equipment normally too large to sanitize by immersion in 180°F water may be sanitized by one of the three following methods:

- With live steam from a hose.

- By rinsing with boiling water.

- By spraying or swabbing with a chemical sanitizing solution of at least twice the minimum strength used for sanitizing by immersion.

As a general rule, all removable parts of equipment that are washable should be run through the dishwashing machine; instead of machine dishwashing, apply hand dishwashing

operations as described later under methods of sanitizing.

CARE OF STAINLESS STEEL

In today's modern galleys and food service areas, stainless-steel appliances of all types are commonly used. The following list of equipment is representative:

Salad and vegetable sinks
Drainboards
Shelving
Counters
Tables and carts
Food preparation equipment
Scullery equipment

One of the first things to remember about caring for stainless steel is that it depends upon contact with air to retain its finish. If dirt and grease are deposited and remain for a lengthy period on the surface, the finish may be harmed. Preventive maintenance of stainless steel should include constant care.

- Spot clean for hand and fingerprint smears.
- Wash all exterior surfaces ot stainless steel appliances at least once a day. Wipe off with a damp cloth to which a detergent and a sanitizer have been added.
- Stainless steel should be rubbed dry so that water spots or streaks do not form. Wipe with a clean, dry cloth in the direction of the "grain" or polishing line in a horizontal direction.
- Stainless steel's brightness and luster can be maintained by using a solution of mild cleanser, ammonia, and warm water.

Because some manufacturers put a permanent-type finish on stainless steel, special polishes should be used to retain the finish. These polishes are usually composed of a silicone-base material and do not contain abrasives.

Because vigorous scrubbing and abrasives may do permanent harm, the following precautions should be used in cleaning operations:

- Do not leave strong sanitizing solutions on stainless-steel surfaces very long. NO NOT USE STEEL WOOL or stainless steel brushes or scraping instruments when doing routine cleaning. Use a fiber brush if there are stubborn spots. A nonabrasive cleaner such as pumice or any other very fine scrubbing powder or paste will remove baked-on food deposits and other minor discolorations.
- Test materials first before using, particularly if there is a heavy tint or discoloration. A mild organic detergent or paste will remove it. Cleaning materials of this type must be thoroughly rinsed off; stainless steel should be rinsed with clear water, followed by a rinse such as a solution of bicarbonate of soda to neutralize the acid. If grease deposits and baked-on food spots are not removed with this treatment, vigorous scrubbing may be needed and some scratching may result.

BAKERY EQUIPMENT

One of the chief responsibilities of the baker is to see that the bakery area and equipment are kept clean and sanitary. The baker can cooperate with the engineer to perform recommended preventive equipment maintenance when he knows his job, is familiar with equipment, and applies good cleaning and sanitation practices in the performance of his duties. Real teamwork is effective in the bakery when maintenance crews recognize this assistance.

A clean, wholesome work area invites voluntary cooperation by personnel to maintain orderliness and sanitation. A scrap of dough on a clean floor stands out like a sore thumb. A similar piece of dough falling on dirty and littered floor becomes only a part of the whole lack of sanitation and will not be noticed or picked up. The psychology of cleanliness and orderliness is as simple as

that. All utensils, equipment, and stored ingredients should be inspected at least once each week.

For details on cleaning and sanitizing major pieces of bakery equipment, see Figures 3-19 through 26. General points to consider in cleaning and sanitizing bakery equipment include the following:

- Allowing crumbs to accumulate in the equipment will result in improper operation of the bread-slicing unit, and a serious mold condition will develop.

- Dough, when allowed to dry, becomes an abrasive. Therefore, equipment such as the divider must be thoroughly cleaned and oiled when shut down for more than ½ hour; dough mixers should be wet cleaned as often as is required to prevent hardening of dough.

- Good daily housekeeping of flour storage rooms will greatly assist in baking sanitation. This includes regular wiping of walls with sanitizing solution.

- Dough or loaf rounders are not standard bakery equipment aboard ship; for those activities with this equipment, care and maintenance should include cleaning catch pans and troughs and freezing cones of dough encrustation to prevent heat buildup, distortion, and wear. Clean the rounder during the run, and, after equipment is shut down, thoroughly clean with hot detergent water and brushes followed by adequate rinsing. The cover of water meters should be removed and the meter assembly blown off with an airhose and cleaned free of any flour, dust, and dirt accumulations. Check the packing glands and linkages. Remove and clean the strainer as often as necessary, depending upon the condition of the water used; probably about every 3 months is adequate. The accuracy of the meter should be checked at least once each month by setting it for a desired quantity of water. Run the water into a can or drum, and weigh it on an accurate scale. At least three such scaling tests should be made.

- Humidifers for both fermentation rooms and proof boxes should be throughly checked each week and cleaned to rid these units of flour, dust and water impurities. The drains and spray nozzles become clogged, and the blower and coil units become slimy and covered with hard scale when not cleaned regularly. Sometimes mold develops on proofed products. All ductwork should be disassembled and cleaned about once every 4 weeks. Control instruments and float valves should be checked for proper operation and cleaned weekly.

- All baking pans should be kept clean. Dirty pans are unsanitary and will impart objectionable odors or taste to the finished product. Pans are washed by two methods: hand washing or tank washing. For each washing method, it is important that the proper pan-cleaning material be selected. The cleaner must be powerful enough to remove the carbon and dirt and yet not harm the surface coating of the pan.

- Oven ventilation stacks and exhaust fans should be checked and cleaned frequently. Check and clean the bottom section of the hearth as often as necessary, for these areas frequently cause fires. All safety controls should be checked at least once each week and faulty parts repaired. Steps and recommended procedures for cleaning ovens are given in Figure 3-40.

Step	Procedure
1. Open doors for access to slice-thickness mechanism. Obtain airhose extension **Note:** Models may require removal of a center panel for access.	Set spacing mechanism to widest thickness. Use compressed air with the aim of a long pipe or L-shaped tube extension which reaches across the mechanism.
2. Blow crumbs out, using 100-pound pressure or more to remove crumbs	Aim hose orifice upward toward infeed side first to blow crumbs from the top side down into machine.
3. Check parts for proper cleaning	Blades, frames, and guides must be crumb free. Motor and drive unit must be free of crumb accumulations.

Caution: STEEL WOOL MUST NOT BE USED.

Figure 3-19. - Cleaning Bread Slicers.

Step	Procedure
1. Shut off power	Disconnect switch when knife and ram are at extreme backward position, or turn divider by hand to move knives to the rear.
2. Prepare divider for cleaning	**Daily** Thoroughly clean these parts: Sifter Scaling plunger Measuring chamber Ram Knife Hopper Conveyor belt Remove parts in this order: Remove pan. Remove pins and pull lever forward. Depress trip to release knives. Remove dropped knives with care. Release ram and remove with care. Remove all plungers. **Weekly** Remove frame, trip, bedplate, knife frame and clean thoroughly.

Figure 3-20. - Cleaning a Dough Divider.

Step	Procedure
3. Clean parts	**Daily**
	Base and frame: Clean with hot machine-dishwashing detergent solution; rinse and dry. Pistons: Soak in bucket containing a solution of soda and water. When dough has loosened, remove and rinse under hot running water. Dry. Dip each piston in divider oil and wipe off excess before replacing in cylinders that have been wiped or scraped free of all dough. Dough box or hopper: Use wood or plastic scraper.
	Weekly
	Soak pressure stems, all screws, and removable parts in hot machine dishwashing detergent solution. Scrub. Rinse and air-dry.
4. Brush and clean frame	**Daily**
	Vacuum or blow out all flour from divider, conveyor belts, drives, and switchboxes. Clean face of yoke and floor of divider, scraping if necessary. Clean frame with mild detergent solution. Rinse, dry.

Figure 3-20. Cont. - Cleaning a Dough Divider.

Step	Procedure
1. Stop motor and fill bowl	Run to mix position. Add 5 gallons hot water to bowl ½ hour after use.
2. Start motor, operate clutch	Run mixer several minutes with clutch operating to loosen hardened dough.
3. Disengage clutch and clean	Run bowl down halfway to dump position to aid cleaning. Clean surfaces with stiff brush.
4. Empty bowl	Run bowl to dump procedure.
5. Disassemble and clean bowl seals	Wash all parts, including seal surface on inside of bowl. Air-dry.
6. Coat and replace seal ring	Use liquid petrolatum (NF) to cover seal-ring surfaces before replacing.
7. Dust off flour accumulation	Blow off canopy and base housing with compressed air. Lift mechanism.
8. Check lubrication	Apply transmission oil daily, if needed, to maintain level.

Figure 3-21. - Cleaning Dough Mixers.

Step	Procedure
1. **Daily**, clean edges and wipe exterior	Open each bin (or roll bin out) and wipe with clean, damp cloth, wiping accumulation away from inside of bin.
2. **Regularly**, run bins dry	Remove empty bins and accessible parts from compartment and scrub in sink of hot hand-detergent solution. Rinse under very hot running water. Invert over steam jet and leave several hours to air dry. Replace.
3. Clean each bin compartment	Brush or blow out and vacuum flour (or sugar) from walls and floor to prevent weevil infestation. Wipe walls and floor with sanitizing solution. Spot fumigate.

Figure 3-22. - Cleaning Sugar and Flour Storage Bins.

Step	Procedure
1. Shut off power	Once daily; cleanup should proceed with machine turned off for maximum safety.
2. Blow out dough particles and flour	Use airhose to clean hard-to-reach areas.
3. Clean	Use wet sponge to soften hardened dough on rolls, scrapers, deflectors. DO NOT USE TOOLS OR COARSE ABRASIVES.
4. Check conveyor belts	Clean daily after shutdown, and during operation if dough particles stick.
5. Paint rollers with divider oil	Apply oil to soften any remaining dough after shutdown. DO NOT USE RAGS to wipe on oil during operation. Use a brush to apply oil every hour during run.

Figure 3-23. - Cleaning a Molder.

Step	Procedure
1. Remove shelves and clean	Scrape off sticky substances, scrub frame and shelves with hot machine-detergent solution or use steam hose. Rinse or use steam hose. Air-dry.
2. Clean wheels or casters	Scrape dirt off wheels, scrub with brush. Rinse and dry. Apply very thin coating of rust preventive around bearings. **Weekly** Oil or grease caster (or wheels).

Figure 3-24. - Cleaning a Pie Rack.

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Step	Procedure
1. Clean interior after removing racks	Clean floor, walls, top, and inside of door. Scrape sides, corners, and guide rails with putty knife. Scrub floor with long-handled gong brush and hot machine-detergent solution. Rinse, dry. Wipe guide rails and ledges thoroughly. Remove and clean water pan, rinse, wipe dry.
2. Scrub exterior	Scrub top, outside of door, and sides with hot machine-detergent solution; rinse and dry. Apply very thin film of rust preventive to metal (other than stainless steel).
3. Clean around proof box	Scrub back of box and wall. Scrub floor behind and underneath if space permits; flush with hot water.
4. Air-dry	Leave open to air.

Figure 3-25. - Cleaning a Proof Box.

Step	Procedure
1. Immerse pans completely, placing back to back in hot solution, 4–6 hours	Prepare solution in metal tank or equipment which can heat to boiling. Use 2 to 4 ounces cleaning compound*, baking pan per gallon of water at 180°–212° F.
2. Boil pans in solution	Keep solution above 185° F or boil 4–6 hours, or until all burned food and greasy deposits are completely softened.
3. Remove pans from solution	Use an iron hook to remove pans. Use care not to injure skin with solution.
4. Rinse off solution	Use clear water; rinse each pan thoroughly to completely remove solution.
5. Scrub	Use a stiff bristle or fiber brush to remove stubborn areas of carbon.
6. Rinse	Use hot water again to remove loose soil adhering.
7. Dry	
8. Store	Stack cleaned pans upon pan truck or skids. Cover with duck or canvas or heavy paper between uses.

*Do not use for cleaning aluminum-type baking pans.

Safety Note: Personnel should wear rubber aprons, rubber gloves, and goggles when using cleaning compounds.

Figure 3-26. - Cleaning Bread Baking Pans (Steel and Tinned Steel).

FOOD PREPARATION AND BEVERAGE EQUIPMENT

The procedures that personnel shall follow in cleaning and sanitizing equipment used in preparation of food and beverages are given in Figures 3-27 through 3-48.

Step	Procedure
1. Clean shaft **DAILY** and after use	Lift vertical shaft out of base. Soak in hot detergent solution (1 ounce to 1 gallon water). Scrub with stiff-bristled brush. Rinse under hot running water. Air-dry.
2. Rinse and sanitize	(Give careful attention to edge of base and can-holding mechanism.) Dip scrub brush in cleaning solution frequently. Rinse. Sanitize.
Periodically (as needed)	
1. Disassemble and clean base	Loosen and remove screws. Detach base. Soak in hot detergent solution; rinse. Air-dry.
2. Clean table	Using brush, scrub with hot detergent solution (use scraper if necessary). Rinse and air-dry.
3. Inspect cutting knife or wheel	Replace if nicked or badly worn.
4. Clean base and screws	Scrub base thoroughly with hot machine-detergent solution. Air-dry.
5. Rustproof	Apply very thin film of rust preventive to shank and bottom of base before reassembling.

Figure 3-27. - Cleaning Manual Can Openers (Bench-Type).

Step	Procedure
1. Clean cutting boards and sanitize after each use	Wash in dishwashing machine or use approved chemical sanitizer. Proceed as for machine or manual cleaning of tableware.

Figure 3-28. - Cleaning Cutting Boards (Styrene Rubber Types).

Step	Procedure
1. Disassemble removable parts	Remove lid and disk.
2. Wash interior	Flush with hot water; scrub thoroughly, walls, shoulders, inside and outside of door. Leave door open to air-dry.
3. Clean peel trap	Remove (or raise) lid, strainer, and stopper. Flush interior with hot water; scrub with stiff fiber brush while flushing. Leave open to air-dry.
4. Clean parts	Under hot running water, scrub lid, disk, strainer, and stopper. Leave abrasive parts out to dry.
5. Clean exterior	Wipe or scrub with brush and hot detergent solution. Rinse.

Note: If exterior surfaces are stainless steel, clean as directed earlier.

Safety Notes

1. Do not stop machine while in motion. Allow it to empty before opening.
2. Never operate the peeler unless water has been properly applied.

Figure 3-29. - Cleaning a Vegetable Peeler.

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Step	Procedure
1. Disconnect machine, and remove slicer and disk for further cleaning	Raise top of unit. Remove knobs and lift off front plate. Remove half nut and lock washer holding slicer disk. Remove knife Remove adjusting arm and knurled knobs. Remove slicer disk.
2. Remove cutting head if machine is used daily (once monthly remove shear knives and sharpen, clean, and scrape surfaces from which knives have been removed)	Raise top cover of unit. Remove 2 knurled knobs and end plate. Remove wing nut on top of head and slide out cutting head. Place head in sink and turn on faucet full force. Pick out food particles wedged in. Wash. Rinse. Sanitize.
3. Clean stationary parts	Wash in mild detergent solution. Rinse, spray, sanitize or wipe off with sponge dipped in sanitizing solution. Steam or hot water should not be used.
4. Reassemble slicing disk and cutting head	Replace all nuts, screws, and washers carefully.

Figure 3-30. - Cleaning Vegetable Cutting and Slicing Machines.

TABLE 27. - Directions For Cleaning Meat And Vegetable Chopper.

Daily: Preflush. Scrub bowl and parts with long-handled brush and 125° F detergent water. Rinse. Air-dry. Sanitize. Be sure to reach all food-contact surfaces.

Step	Procedure
1. Shut off motor and disassemble for weekly cleaning	Lift out feeder pan; remove the following: Adjusting ring Perforated chopping plate Knife Feed screw Chopping cylinder
2. Clean	Run parts through dishwasher or wash in detergent water in pot and pan sink with brush. Scrub vigorously until food particles are loosened.
3. Rinse. Sanitize and air-dry	If not machine cleaned, adequately rinse to eliminate solution and sanitize in 180° F water. Reassemble.

Safety Note: Clean blades with great care. Always leave hand guardrail in place except long enough to clean the blade.

Figure 3-31. - Cleaning Meat and Vegetable Choppers.

Step	Procedure
1. Disconnect machine and disassemble	Remove cover, meat guides, knives, and cutter rolls. Soak in hot detergent solution.
2. Scrub with thin, long-handled brush	Use thin, long-handled brush to scrub blade assembly and all fixed accessible parts. Rinse. Sanitize. Air-dry.
3. Rinse and sanitize	Spray sanitizer on fixed parts and reassemble.

Figure 3-32. - Cleaning a Meat Tenderizer (Masticator).

Step	Procedure
1. Disassemble parts after each use	Turn off power. WAIT UNTIL KNIVES HAVE STOPPED REVOLVING.
2. Clean knives, bowl guard, and bowl	Remove blades from motor shaft and clean cautiously and carefully. Wash with hand-detergent solution. Rinse and air dry. Remove all food particles from bowl guard. If bowl is removable, wash with other parts; or if fixed, wipe out food particles from table or base. Clean with hand-detergent solution; rinse and air-dry.
3. Clean parts and under chopper surface	Immerse small parts in hot hand-detergent solution; wash, rinse, air-dry.
4. Reassemble detachable parts	Replace comb in guard; attach bowl to base and knife blades to shaft. Drop guard into position.

Note: Choppers vary considerably in mechanical operational details. Alter some of the above steps if models and brands differ.

Figure 3-33. - Cleaning Chopper Parts of a Mixing Machine.

Step	Procedure
1. Clean machine immediately after use	Wash the following with detergent solution (1 ounce to 1 gallon of water): saddle, shaft, beater shaft, shell, and base. Rinse; air-dry. Scrape and brush out groove on beater shaft if necessary.
2. Clean parts	Soak bowls and beaters immediately after using; wash with pots and pans in hot detergent water, rinse, and air dry. Or, small bowls, beaters, and whips may be run through the dishwashing machine.
3. Oil shaft	Drop 5 or 6 drops of mineral oil in hole on shaft of auxiliary drive after every daily cleaning.

Figure 3-34. - Cleaning Food Mixers.

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Step	Procedure
1. Shut off motor. Disassemble after each use and wash all food-contact surfaces	To disassemble patty pickup disk assembly: Remove nuts and lift off cam plate and pick disk. Remove propeller and hoppers and rotary knife: Unscrew, pull out lockpin, push back stop-arm; remove pitch blade; lift off hopper and hopper base. Remove turntable: Unscrew locknuts and lift off turntable or mold plate.
2. Clean and sanitize removable parts	If necessary, soak plate, disk, pitch plate, hopper, base, and turntable in hot detergent water; scrub with brush; rinse; sanitize in 180° F water or apply steam. Air-dry. Reassemble.

Note: Spray a light film of mineral oil after each washing. DO NOT OVERLUBRICATE.

Figure 3-35. - Cleaning Automatic Food-Shaping or Molding Machines.

Step	Procedure
1. Rinse kettle immediately after cooking	Open draw-off faucet and flush with water.
2. Soak	Close drain valve. Fill with water above cooking level. If greasy, apply heat. If eggs were cooked, leave water cold. Use a scrub brush to loosen food particles. Drain soak water.
3. Refill and clean	Add detergent, using 1 ounce to 1 gallon of water. Clean interior, hinges, under surfaces of lids, and frame with brush. Drain. Flush out.
4. Remove drain-off faucet fittings and disassemble drain line	Scrub draw-off faucet and fittings with a flexible-handled brush. Pull back and forth through tube under running hot water; thoroughly clean in detergent water, rinse with 180° F water to sanitize. Drain valves and tubing should also be cleaned and sanitized in a similar way.
5. Remove vapor exhaust piping (if fitted) stack and block stable hole	Clean lines and sanitize, air-dry, and replace.
6. Scrub exterior and frame	Use hot detergent water and brush.
7. Resterilize interior	Before using kettle, rinse with 180° F water.

Note: The above procedure is recommended for stainless steel kettles. If metals are aluminum, brightening or whitening is required. Boil with vinegar water for a short period or use products recommended for cleaning aluminum following manufacturer's directions. Do not use caustic cleaners or steel pads. If kettles are stainless steel, clean as directed earlier.

Safety Note: Determine that the safety valve is in proper working order before using kettle.

Figure 3-36. - Cleaning Steam-jacketed Kettles (Copper).

Step	Procedure
1. Turn off heating element	Allow fat to cool to 150° F.
2. Drain and filter fat (after each use)	Open drain valve and catch drained fat in container. Drain entire kettle contents and filter into a container. Place a clean fat container into well or wash and replace original one.
3. Remove baskets	Scrape off oxidized fat with a knife. Remove loose food particles from the heating units with a spatula or a wire brush. Flush down sides of kettle with a scoop of the hot fat. Soak basket and cover in deep sink in hot detergent water.
4. Remove strained sediment container or cup as often as necessary for cleaning	Clean off sediment and place back in kettle. Stir hot fat and whirl sediment to center to permit settling in sediment container.
5. Close drain. Fill tank with water	Add water up to fat level. Add 2 ounces dishwashing compound.
6. Turn on heating element	Set heat control at 250° F and boil 10-20 minutes, depending on need.
7. Turn off heat	Open drain. Draw off cleaning solution.
8. Scrub interior	Using long-handled brush, scrub interior. Flush out with water. Clean basket with nylon brush and place back in kettle.
9. Rinse and sanitize	Fill kettle with water. Add ½ cup vinegar to neutralize remaining detergent. Turn on heating element. Boil 5 minutes; TURN OFF HEAT. Drain. Rinse with clear water.
10. Air dry parts	Expose baskets and strainer to air and dry.
11. Clean exterior	While kettle is cool, wipe off exterior with grease solvent, or a detergent solution. Rinse.

Weekly Cleaning

Destain deep-fat fryer:

1. Fill the kettle to fat level with water. Heat to at least 175° F, or allow it to boil for 5 to 10 minutes. Turn off heat.
2. Add 2 tablespoons of destaining compound (stain remover, tableware) per gallon of water. Let stand up to 1 hour. Agitate solution and loosen particles remaining on the sides of kettle.
3. Place screens and strainers in 175° F water containing 2 tablespoons of destaining compound per gallon. Make sure water covers. Allow to stand overnight. Rinse thoroughly and air dry.
4. Drain kettle and rinse thoroughly before replacing cleaned screen and strainer.

Figure 3-37. - Cleaning Deep Fat Fryers (Routine Daily Cleaning).

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Step	Procedure
1. Turn off heat and let chamber cool. Clean interior of chambers and doors	Remove metal grates. Dip brush in hot machine-detergent solution, scrub interior; rinse, drain. Flush drain line and boiler with 180° F water. DO NOT USE STEEL WOOL OR ABRASIVE CLEANER. KEEP DRAIN LINE OPEN.
2. Remove and wash cooking pans	Hand-wash or machine-wash and sterilize.
3. Blow out steam line to each deck	Close door, catch, and turn on steam for 3 seconds to sterilize. Shut off and open door to air-dry interior.
4. Clean exterior	Scrub with brush and hot detergent solution, legs, sides, top, back, outside and inside of doors, space between door and wheel handle, between each door and strap. Rinse with hot water; dry. Polish stainless-steel exterior with nonabrasive cleaner. DO NOT USE STEEL WOOL.
5. Clean and replace metal grates or shelves	Place in sink of hot detergent solution; scrub both sides with brush, rinse under hot running water, and air-dry. Slide grates in place, rehooking lever to hold.
6. Air	Leave doors open to air and dry out condensation after cleaning and/or use.

Biweekly Cleaning

Heavy scale deposits from minerals in water should be removed. Use descaling compound recommended by manufacturer. Compartments and drains must be kept clean and free from sediment. Keep gaskets and pressure screws clean.

Safety Notes

1. Do not obstruct or tamper with safety valves.
2. Do not let steam pressure exceed manufacturer's recommendations of 5 to 7 psi.

Figure 3-38. - Cleaning Stack Steam Cookers.

Step	Procedure
1. Turn off main power switch. Let chambers cool. Disassemble	Remove drain siphon and drain pan.
2. Wash interior chamber walls, door, spray nozzle	Use a mild detergent solution. Scrub interior with plastic brush to remove stubborn food particles.
3. Soak cooking chamber, drain siphon, and drain pan. Rinse	Stop up drain. Add about 2 quarts of detergent solution and let remain for short time. Drain. Rinse with clean hot water.
4. Clean exterior	Scrub with brush and hot detergent solution, legs, side, top, back, outside and inside of doors, space between door and wheel handle, between each door and strap. Rinse with hot water; dry. Polish stainless-steel exterior with non-abrasive cleaner. DO NOT USE STEEL WOOL.
5. Replace parts	Fill drain pan with 2 quarts of hot water; close chamber door. Operate for a 5-minute cooking cycle.

Cleaning after use (or as needed)

Thoroughly clean cookers in which meat and starchy foods are cooked frequently. Remove pan racks, door, particle tray, and spray nozzle. Wash with a solution of hot detergent water Rinse with clean hot water. Replace parts.

Figure 3-39. - Cleaning High-speed Steam Cookers (Routine Daily Cleaning).

Step	Procedure
1. Turn off heat. Scrape interior	Sprinkle salt on hardened spillage on oven floor. Turn thermostat to 500° F. When spillage has carbonized completely, turn off oven. Cool thoroughly. Scrape floor with long-handled metal scraper. Use metal sponge or hand scraper on inside of doors, including handles and edges.
2. Brush out scraped carbon, loose foods	Begin with top deck if stacked. Brush out with stiff bristle brush and use dustpan to collect. Reel decks are easily lifted off for cleaning.
3. Wash doors	Use hot detergent solution on enameled surfaces only; rinse; wipe dry.
4. Brush combustion chamber	Use small broom or brush to clean every day.
5. Clean and polish exterior	Wash top, back, hinges, and feet with warm hand-detergent solution; rinse; wipe dry. Polish stainless steel as directed earlier.

Note: Do not use water to clean the oven. Never pour water on or use a wet cloth or sponge to soak.

Figure 3-40. - Cleaning Ovens.

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Step	Procedure
1. Clean back apron and warming oven (or shelf)	Let range cool before cleaning. Using hot, damp cloth, wrung almost dry, wipe back apron and warming oven. Remove hardened substances with putty knife; if greasy, scrub with hot machine-detergent solution; rinse; wipe dry.
2. Remove top sections, scrape edges and flat surfaces	Lift plates. Remove burned particles with putty knife, scrape edges of frame, lid, ring, and plates. Scrape burned material from top flat surfaces with wire brush.
3. Wipe heating elements. Reassemble all parts of top	Wipe heating elements with a damp cloth.
4. Clean base and exterior	Wipe with cloth dampened with hot detergent water.

Note: Do not immerse heating elements in water.

Biweekly Cleaning

Soak grease receptacles and drip pans in detergent solution for 20-30 minutes; scrub, rinse, and dry.

SAFETY NOTES on ranges

Greasy ranges or ovens are serious fire hazards. Do not allow grease to collect on ranges. Follow these rules to avoid fire danger:

1. Use utensils of proper size to prevent boiling over.
2. Regulate heat as required to prevent boiling over of liquids.
3. Handle utensils safely to prevent spilling.
4. Do not attempt to clean ranges while hot.

In case of fire on a range:

1. Turn off heat controls. Use carbon dioxide "Purple K" fire extinguisher on the blaze. DO NOT USE WATER.
2. NOTIFY THE OFFICER OF THE DECK IMMEDIATELY.

Figure 3-41. - Cleaning Range Surface Units.

Step	Procedure
1. Turn off heat. Remove carbonized grease (after each use)	NEVER clean a surface plate while hot. Scrape surface with spatula or pancake turner. Wipe clean with dry paper towels. Use pumice stone block to clean hard-to-remove burned areas on plate, after each use.
2. Clean grease and/or drain troughs	Pour hot detergent solution into small drain and brush. Rinse with hot water.
3. Empty grease receptacles	Remove grease from scrapings and supporting pans with hot detergent solution; rinse and dry.
4. Scrub guards, front, and sides of griddle	Using hot detergent solution, wash off grease, splatter, and film. Rinse and dry.

Periodic Heavy Cleaning

(This cleaning should not be required if above procedure is followed routinely.)

Make sure plate is cold before proceeding. Cover entire surface for 4 or 5 hours with cloth dampened with household ammonia.

Figure 3-42. - Cleaning Griddles.

Step	Procedure
1. Rinse	After each day's operation, run in cold water and operate dasher a few seconds. Drain. Refill and repeat if necessary. PUSH CLUTCH KNOB IN DURING RINSING.
2. Wash	Run in warm water and add dishwashing detergent and operate for 1 minute. Rinse; drain.
3. Disassemble freezer	Wash beater assembly, bearings, openings, and other removable parts with brush and warm detergent water. Rinse.
4. Sanitize chamber and parts	OPEN FREEZER SUCTION SHUT-OFF VALVE. Use sodium hypochlorite solution (5 percent): Measure 3 teaspoons (¼ ounce by weight) per gallon of water. Or use sodium hypochlorite solution (10 percent): Measure 1½ teaspoons (⅛ ounce) per gallon of water. Or use calcium hypochlorite, tech. (70 percent) in the ratio of 1½ teaspoons to 5 gallons water or use disinfectant food service, as directed on package. Follow with warm water rinse. HAVE CLUTCH KNOB IN DURING RINSING.
5. Dry	Drain the freezer and leave open to air dry.

Note: Keep spoons, spatulas, dippers, scoops used for dispensing ice cream in running water or maintain at 180° F between use. Boil all accessory parts of freezer equipment for 2 minutes if chemical sterilizers are not available.

Safety Notes

(1) Never start the mixer motor with the freezer door open.
(2) Never unlock the freezer door when mixer motor is running.
(3) Never use boiling water (212° F or boiling temperature) or live steam to sterilize the machine unless other methods are not available. Open the freezer suction shutoff valve if necessary to sterilize with water or steam.

Figure 3-43. - Cleaning Ice-Cream Freezer.

Sanitize, before use, all utensils that come in contact with mix.
Thoroughly clean and sanitize ice-cream freezer and all component parts daily.

To Clean

(1) Empty freezer and flush with cold water until water runs clear.
(2) Rinse again with warm water (120° F).
(3) Pour a 140° F solution of water and detergent into freezer and brush hopper as detergent runs through freezer.
(4) Remove all parts that come in contact with the ice-cream mix: lid, hopper valve, dasher, freezer door, all gaskets, seals, and O-rings. Place all parts in detergent solution and brush all surfaces. Brush inside of freezing cylinder; pay particular attention to the back wall and shaft connection. Rinse all parts thoroughly and allow to air-dry.

To Sanitize

Prepare sanitizing solution according to package directions on calcium hypochlorite or disinfectant-food service. Dip hands in this solution before assembling machine. Dip each part in solution as machine is assembled. Pour remaining solution into hopper and brush solution over entire inside and lid. Rotate dasher as solution runs through mixer. Drain completely, and the freezer is ready for the next batch of soft serve ice cream.

Figure 3-44. - Cleaning Soft-ice-cream Machines.

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Step	Procedure
1. Disconnect and disassemble	After toaster is cooled, remove pan, slide, and baskets. Move each basket midway up in front. Press left carrier chain to permit pins to slip out of holes in basket.
2. Clean surface and underneath	Use soft brush to remove crumbs from front surface and behind bread racks.
3. Clean frame and interior as far as is accessible	Wipe clean with warm hand-detergent solution. Rinse. Dry. Polish if necessary with nonabrasive cleansing powder. Exterior casing should not be allowed to collect excessive grease or dirt. Use a nonabrasive cleaner to remove stubborn spots. Prevent water and cleaning compounds from touching conveyor chains. If frame is stainless steel, clean as directed earlier.
4. Clean and replace parts	Wash front, back, and sides of pan and slide. Rinse. Lay toaster aside to air dry. Clean baskets by boiling in hot detergent water. Rinse. Air-dry. Rehang basket, starting with right-hand chain first.

Figure 3-45. - Cleaning Rotary Toasters.

Step	Procedure
1. Rinse urns	Flush with cold water after use.
2. Heat water and half fill coffee tank	Be sure outer jacket is ¾ full of water and turn on heat. Open water inlet valve and fill coffee tank with hot water to coffee line. Add recommended quantity of cleaning compound (1 to 2 ounces per gallon). Allow this solution to remain in liner approximately 30 minutes, during which time the heat should be on full.
3. Brush liners, faucet, gauge glass, and draw-off pipe	Scrub inside of tank, top rim, and lid. Draw off 2 quarts of solution and pour it back to fill valve and sight gauge. Insert brush in gauge glass and coffee draw-off pipe and brush briskly. Replace.
4. Drain	Open coffee faucet and completely drain solution. Save. Close faucet.
5. Rinse	Open water inlet valve into coffee tank. Use 1 gallon hot water. Open faucet for 1 minute to allow water to flow and sterilize dispensing route.
6. Disassemble faucet and spigot. Clean	Scrub with brush. Rinse thoroughly.
7. Refill	DAILY draw over enough hot water to half fill urn. Leave water in urn overnight. TWICE WEEKLY make a solution (1 cup of baking soda to 1 gallon of hot water) and let remain in urn approximately 15 minutes. Drain. Flush thoroughly with hot water before use.

Safety warning: Hang warning tag on faucet while urn is soaking with cleaning compound. For further cleaning instructions, see figure 6-9.

Figure 3-46. - Cleaning Coffee Urns.

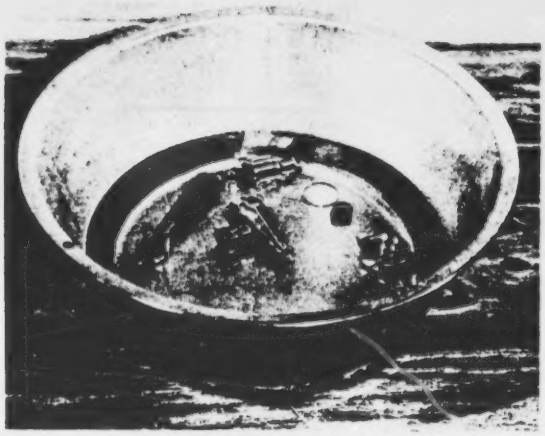
Step 1: Clean nonglass liner. Scrub thoroughly, brushing entire surface.

Step 2: Clean glass liner. Scrub thoroughly, dipping mop into solution, working up and down.

Step 3: Clean drain tube. Place long-handled brush dipped in cleaning solution. Work up and down, keeping solution in tube opening.

Step 4: Clean coffee glass gauge. Remove glass gauge and clean out cap at top. Place brush in gauge and work up and down as shown.

Figure 3-47. - Detailed Cleaning of Disassembled Coffee Urn.



Step 5: Soak disassembled faucet. Scrub handle, bolt, cap (if there is one), tension spring, lock nut, and stem with brush to remove dried coffee deposits. Soak in hot water as shown.

Figure 3-47. - Cont. Detailed Cleaning of Disassembled Coffee Urn.

Step	Procedure
1. Fill urn with destaining compound solution	Fill urn with water 175° F. Add destaining compound (stain remover, tableware, in this ratio: 2 tablespoons per 5 gallons of water or as directed by manufacturer).
2. Draw off mixture and repour	Open spigot and draw off 1 gallon; thoroughly remix to allow mixture to come into faucet. Allow solution to stand for 1 hour at 170°–180° F. Stir occasionally.
3. Scrub urn liner, gauge glass	Use long-handled brush to loosen scales.
4. Clean faucet	Take faucet valve apart and clean all components. Soak in hot water until reassembled.
5. Rinse and reassemble faucet valve	Rinse urn liner 3 or 4 times carefully with hot water. Repeat until all traces of compound are removed.
6. Refill urn	Place enough hot water in urn to fill and allow to remain until next use. Drain and replace with fresh water when ready to make coffee.

Note: To destain vacuum-type coffee makers: Use a solution of 1 teaspoon of compound per quart of warm water. Fill lower bowl up to within 2 inches of top. Assemble unit, apply

Figure 3-48. - Destaining Coffee Urns and Pots (Biweekly Cleaning).

Daily

1. Wipe exterior parts with a soft damp cloth.
2. Empty the drip pan and wash drip pan and grill with mild detergent and warm water.
3. Open front jacket, remove mix trough and wash in mild detergent and warm water.
4. When inspecting parts, remember their order of removal, so they will be replaced properly.
5. Do not soak plastic parts in hot water, or wash in dishwashing machines.

Figure 3-49. - Cleaning Instant Iced-Tea Dispensers.

Step	Procedure
	thoroughly after each use by proper machine dishwashing or by hand-cleaning and sanitizing processes. Air-dry. Store in clean area until needed.
3. Drain water from steam table	Remove overflow pipe, using cloth to prevent burning hand.
4. Prepare cleaning solution; assemble supplies	Dissolve 1 ounce of dishwashing detergent in suitable container.
5. Scrape out food particles from steam table	Use a spatula or dough scraper. Take care not to damage exposed heating units and compartment.
6. Scrub interior and clean exterior	Use scrub brush and cleaning solution.
7. Rinse and dry exterior	Use warm water to remove excess cleaning solution; wipe dry.
8. Rinse interior	Use enough clear water to remove all traces of detergent.

Note: Hot-food tables, electric, mobile: Clean corrosion-resistant steel after each use. Ordinary deposits of grease and dirt can be removed with mild detergent and water. Whenever possible, thoroughly rinse and dry after washing.

Weekly

Hard-water film or haze will build up if equipment is not given regular attention. Remove all lime, rust, and scale weekly to obtain maximum operating efficiency and to maintain sanitation and clean appearance. Weekly, fill jacket with hot water to a level that covers deposit. Add a descaling compound in proportions recommended by the manufacturer. Bring solution to boil; turn off heat; leave overnight and brush surfaces thoroughly before draining. Rinse.

Figure 3-50. - Cleaning Steam Tables.

Step	Procedure
1. Transfer shallow pans or trays and other containers to preparation areas following meal service	Refrigerate or destroy leftover items as directed. Run insert pans and/or trays through dishwashing machine (see tables 2-57—2-58).
2. Clean and sanitize table counters	Wash off and/or scrub table surfaces with detergent and plastic brush. Rinse. Sanitize by swabbing with solution containing sanitizing agent.
3. Periodically descale to prevent rust, lime, or hard-water scale formation (nonrefrigerated types only)	Fill table bed with boiling water. Add a descaling compound in proportions recommended by manufacturer. Allow to stand for several hours. Scrub with a plastic brush. Drain. Rinse thoroughly. Sanitize by spraying on solution.
4. Defrost electrically refrigerated units	Turn off current and defrost ice formation from coils as often as required. Follow up with cleaning procedure described above.

Figure 3-51. - Cleaning Refrigerated Salad Bars (With Ice Beds or Electrically Refrigerated).

FOOD SERVING EQUIPMENT

Proper cleaning and sanitizing procedures for food service equipment on the line and around the mess hall are equally as important as in the galley. A number of regulations attendant to serving food must be observed to reduce the possibility of food infection. All pans, serving utensils, and counters must be kept immaculately clean and sanitized. The mess tables, benches and/or chairs, and condiment and napkin dispensers also can become sanitation problems if not carefully cleaned and sanitized along with the other serving gear.

The use of a self-service system of dispensing butter, breads, relishes, beverages, salads, or certain individual desserts can be satisfactory only if sanitary self-service conditions prevail.

Self-service salad bars must be carefully supervised to preclude contamination and ultimate spoilage of salad and relish items and transmission of pathogenic organisms from one person to another. Sufficient numbers of tongs and other serving apparatus must be provided. These should be replaced from time to time with ones that have been cleaned and sanitized. Potentially hazardous foods on the salad bar (protein foods) must be kept below 40°F to be safe for consumption. Any item containing mayonnaise or salad dressing is potentially hazardous, and these items separately placed in containers for dressing must be kept at safe holding temperatures.

Desserts such as pies, cakes, and puddings should not be self-served unless set up in individually-wrapped containers for self-service. Cookies, fruits (fresh, canned, stewed, and frozen), and fruit-flavored gelatin may be self-served provided they are set up and dispensed in a sanitary manner.

Figures 3-50 through 3-54 give cleaning and sanitizing details for food serving equipment.

Step	Procedure
1. Remove empty cans from dispenser	Place container under valve. Open valve and tip can forward in dispenser to drain out milk remaining. Extract tube and dispose. Lift out oar.
2. Wipe up spillage as it occurs	Use sanitized cloth or sponge to prevent possible contamination.
3. Clean interior when units are empty	Wash entire inner surface with mild cleaning solution. Rinse.
4. Clean exterior	Follow earlier instructions for cleaning stainless steel. If steel shows discoloration or stubborn spots or stains, swab with a standard chemical cleaner and allow to stand 15 to 20 minutes before rinsing with clear water and polishing with a soft cloth.
5. Disassemble and clean valves daily or as frequently as empty cans are removed to keep valves clean and sanitary	To remove lift valves: Swing valve upward and slide pins free of recesses to disengage from plastic well valve. Push plastic well upward to remove. Wash in detergent water. Rinse and sanitize.
6. Place full cans in dispenser	Wipe off bottom of milk cans with sanitizing solution before placing in dispenser. Clamp-type dispensing valves must be thoroughly cleaned and sanitized before reuse.

Note: When ashore, discard used disposable milk containers. Do not reuse.

To Defrost

1. Disconnect power and remove empty cans	Refer to step 1 above for proper way to remove cans from dispenser.
2. Open cabinet door during defrosting	When frost has melted off coils, wash interior with warm detergent water. Rinse with clear water. Spray sanitize. Reconnect power.

Note: Dispensers must be defrosted when ice deposits have accumulated ¼ inch thick on the cabinet interior.

Figure 3-52. - Cleaning Milk Dispensers Daily.

Step	Procedure
1. Disconnect all elements which heat dishes (electrical outlets, blower fans)	Allow dispenser to cool.
2. Empty units and open cleaning panels for interior cleaning	Remove all baskets, trays, tableware, and lift tubes.
3. Clean thoroughly	Ordinary daily cleaning: Flush out units with hot detergent water. Drains in bottom of tube-type dispensers should permit adequate flow. Rinse. Heavy cleaning: Disassemble spring assembly unit by releasing locking pin and sliding up tube through top. Wash with hot detergent water. Rinse.
4. Sanitize	Flush with 180° F water or use chemical sanitizers as rinses.
5. Polish exterior	Stainless-steel outer surfaces of all dispensing apparatus should be cleaned according to directions given earlier.

Figure 3-53. - Cleaning Basket, Tray and Tube-Type Dispensers Used for Tableware.

Step	Procedure
1. Clean away gear not removed to scullery and wipe off	Using a hot detergent solution, wipe tabletops and chairs with a CLEAN sponge or towel.
2. Sanitize after each use	Dip sponge or towel in sanitizing solution. Wipe entire top surface, underside, sides, and legs of tables. KEEP WIPING MATERIAL AND SOLUTION CLEAN. CHANGE THEM FREQUENTLY.

Note: Vinegar cruets, sugar dispensers, and salt and pepper shakers must be removed from tables, emptied, washed and sanitized, and refilled at frequent intervals. Between meals, or in between dining periods, wipe off these containers with a sanitizing agent.

Figure 3-54. - Cleaning Dining Facility Tables, Chains and Benches.

SCULLERY EQUIPMENT

Proper washing, sanitizing, drying, and storing of mess gear are absolutely essential to high quality and safe food service at general mess meals. The scullery operator has one of the most important jobs in food service.

Dishwashing operations at Coast Guard activities consist of both manual and machine methods. Small messes may perform all dishwashing manually, using from one to three sinks to accomplish the job of cleaning and sanitizing food preparation and eating utensils. Larger messes wash by machine, but these operators also must be completely knowledgeable about proper manual methods because pot and pan washing is often done by hand, and mechanical breakdown of machines means that there are times when utensils must be hand washed and sanitized. A combination of organized effort on the part of personnel manning the scullery as well as the application of proper kind and quantity of detergents, temperatures, and techniques are required for both manual and machine dishwashing.

DISHWASHING TEMPERATURES

- Machine wash. - Maintain a temperature range of 140°F to 160°F. Higher temperatures cause some foods such as eggs to stick or solidify or to cook onto the dishes and mess trays.

- Machine rinse. - A supply of hot water for rinses (temperatures of 180°-195°F) will destroy pathogenic bacteria.

- Manual wash. - Temperatures of 110°-125°F are recommended.

- Manual rinse. - Temperatures of 180°F for 1 minute for final rinsing are recommended.

A frequent check of the temperatures of both wash and rinse water should be made during the dishwashing operation to ensure meeting the recommended temperatures. Place thermometers on the dishwashing machine so that bulbs rest in the water as it enters machine wash tanks and spray apparatus, or in wash and rinse sinks in the case of hand dishwashing.

DISHWASHING DETERGENT CONTROL AND WETTING AGENT DISPENSERS

Quantities of detergents used for both hand and machine dishwashing operations require adjustment according to the condition of local water supplies afloat and ashore. For machine dishwashing, the initial charge of dishwashing compound used, as well as amounts required to maintain the proper level of concentration, depends upon the following factors:

- Type of dishwashing machine equipment (single, double tank)

- Quantity of water (number of gallons per tank)

- Quality of water (degree of hardness).

- Type of dishwashing compound (for hard or soft water).

Quantities of compounds for use for dishwashing are established by a recommended standard developed by the Naval Facilities Engineering Command, the Naval Facilities Engineering Command and the Naval Ship Systems Command. The recommended quantities are shown in Figure 3-55 and 3-56 for double- and single-tank machines. respectively. Personnel responsible for scullery operations should post these tables on or near machines for ready reference and acquaint all dishwashing operators with their use.

Remember that the detergent is only 10% responsible for the cleaning action. Water applied at the correct pressure and volume from a properly maintained machine does 90% of the work.

Dispensers, both automatic and semi-automatic, should be used to control the quantity of detergent in dishwashing machines. The dispenser is a container attached to the top of the dishwashing machine into which hot water runs from a small copper tube controlled by a valve. As the water dissolves the detergent powder, the

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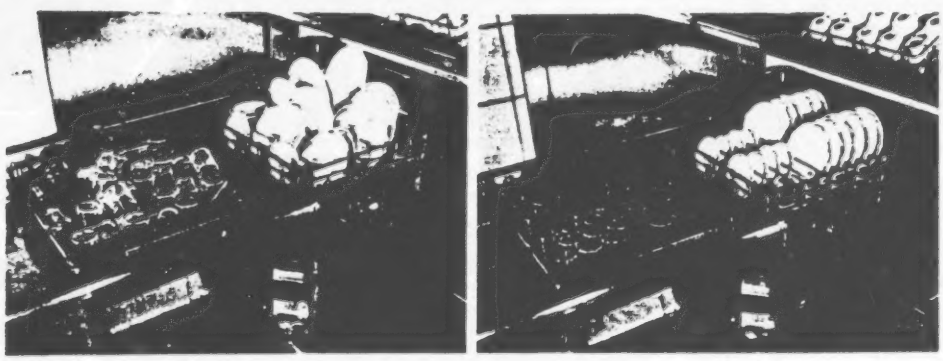
liquid goes down through another valve and discharges into the spray assembly unit. Both automatic and semiautomatic types of dispensers operate similarly. The major difference is that a gauge on the automatic types shows the degree of detergent concentration in the wash tank. A red light goes on whenever the percentage of detergent in the water is below or above what it should be. The operator controlling the detergent then corrects the flow by manipulating the supply valve. When the water contains the right amount of detergent, a green light comes on the gauge, replacing the red one.

Water[1] hardness (grains per gal)	Water in wash tank (gal)	Type of compound	Amount[2]	
			Oz	Cup
Soft:				
0 to 7	10	II	3½	½
0 to 7	15	II	5½	⅔
0 to 7	20	II	7	1
0 to 7	25	II	9	1¼
Medium hard:				
7 to 14	10	I	5	⅔
7 to 14	15	I	7½	1
7 to 14	20	I	10	⅓
7 to 14	25	I	12	1½
Hard:				
14 to 20	10	I	7	1
14 to 20	15	I	10	1⅓
14 to 20	20	I	14	1¾
14 to 20	25	I	16½	2¼

[1]The water used on shipboard may be considered soft. Ashore messes must adjust quantities of detergent according to local water.

[2]The quantities given are initial charges. Add ¼ of the amounts given every 10 minutes.

Figure 3-55. - Recommended Quantities of Dishwashing Compound for Single-Tank Machines (Based on Water Hardness).



WRONG RIGHT

Figure 3-56. - Recommended Procedure for Loading Dishwashing Machine Racks.

PREPARATION FOR DISHWASHING

Preparation techniques preceding the washing operation make for cleaner and more effectively sanitized cooking and eating utensils.

Scrapping and prewashing will preclude entrance of large remnants of food in the dishwashing machine or wash sink. Food remnants hamper the washing operation and cause a breakdown of detergent concentration, which results in dirty film on dishes. Grease and food debris left after washing will soil the rinse water. The installation of prerinsing equipment does not entail great expense if an ordinary shower head, equipped with either a fast or a hand-squeeze valve, can be used.

Couple the shower head to the water supply with rubber hose to allow flexibility.

Presorting and racking are essential to establishing a systematic method of storing dishes after washing. Racking must be done properly so that every surface can be reached by action of detergent and rinse sprays. (See Figure 3-57) for tips on how to load dishwashing machine racks for maximum efficiency.) Figure 3-58 gives step-by-step directions for preparing soiled utensils for washing. The procedures outlined apply to both manual and machine dishwashing.

The semiautomatic dispenser does not have such a device, and the operator must rely on test methods to determine the detergent concentration. Litmus paper (used by chemists to test for acidity and alkalinity) may be used to judge concentration. Detergent is very heavily alkaline; a deep blue color change on litmus paper would indicate too much detergent and a deep pink would indicate too little. Test color charts are available to guide the operator.

The compounds known as rinse injectors or wetting agents, referred to earlier, have several general uses in cleaning operations. In dishwashing, these agents are valuable for enhancing runoff of rinse water from clean dishes, enabling them to dry quickly. This prevents water spotting on utensils. Dishwashing detergents may contain wetting agents for effective action in removing fats, oils, and grease. If such compounds are used, dispensers are not required.

Water[1] hardness (grains per gal)	Water in wash tank (gal)	Type of compound	Amount[2]	
			Oz	Cup
Soft:				
0 to 7	10	II	3½	½
0 to 7	15	II	5½	⅔
0 to 7	20	II	7	1
0 to 7	25	II	9	1¼
Medium hard:				
7 to 14	10	I	5	⅔
7 to 14	15	I	7½	1
7 to 14	20	I	10	1⅓
7 to 14	25	I	12	1½
Hard:				
14 to 20	10	I	7	1
14 to 20	15	I	10	1⅓
14 to 20	20	I	14	1¾
14 to 20	25	I	16½	2¼

[1]The water used on shipboard may be considered soft. Ashore messes must adjust quantities of detergent according to local water.

[2]The quantities given are initial charges. Add ¼ of the amounts given every 10 minutes.

Figure 3-57. - Recommended Quantities of Dishwashing Compound for Double-Tank (Based on Water Hardness).

Step	Procedure
1. Sort and scrape soiled eating utensils and dishes	Sort at collection points in scullery. Scrape food with plastic brushes as gear is loaded. Sort trays, glasses, flatware, dinnerware, pots and pans, as prewash rinse proceeds. Discard cracked or chipped pieces.
2. Prewash rinse	Use fine forceful spray of warm water. Maintain temperature at 110° F. Rinse each piece separately.
3. Presoak utensils	Place knives, forks, and spoons in sinks with detergent water at 130°–140° F. Soak no longer than 15 minutes. Scrub stubborn grease and food with brush. Soak dishes or mess trays with egg deposits in cold water.
4. Load racks with prerinsed gear (for machine operation)	Use separate racks for different sized and shaped articles. Place glasses, cups, and bowls upside down. Place knives, forks, and spoons in separate cylindrical containers with eating surfaces UP. DO NOT CROWD. Rack saucers or plates of similar size so wash spray can reach entire surface. DO NOT OVERLAP. Rack pots and pans after thorough hand washing.
5. Wash sequence	Wash articles manually or by machine in this order: glassware, dishes, mess trays, pots and pans.

Figure 3-58. - Preparing soiled Utensils for Washing(Manual and Machine Operations).

MANUAL DISHWASHING PROCEDURES

The first requirement for manual dishwashing is suitable sinks or vats. A three-compartment sink of adequate width, length, and depth, with a drain board on each end, is recognized as the most efficient facility for pot and pan washing and for baking or other work areas (Figure 2-59). Other facilities recommended are a preflushing apparatus and a drain shelf to be used following the final sanitizing in the third sink.

Equipment accessories for hand or manual dishwashing should include:

- Dip and drain baskets.
- Booster heater for keeping water hot.
- Installed thermometers to make frequent checks on water temperature.
- Approved brushes for washing glasses and other gear.
- Clean dish storage facilities.

The volume of water in the wash sink must be known to figure proper detergent concentration. A quick way to determine this is to use a 5-gallon can to fill the wash sink to the level required. Total the number of gallons added, and mark the water level with a permanent material. The correct amount of water can be measured for subsequent washes by simply filling the sink to the line. The proportion of detergent to add to the wash water can then be determined. The detergent must be measured carefully, and concentrations must be corrected during the washing operation. Follow manufacturer's directions for using detergent.

A wash temperature of 110°-125 °F is needed to ensure removal of grease on utensils and other gear. The temperature of the wash water can be easily determined if a thermometer is secured permanently to the sink so that its bulb rests in the wash water. A sanitizing agent may be added to the wash water to keep down bacterial population as items to be washed are added. There is a constant buildup of bacteria in the wash sink, and the bacteria are transferred to the rinse vat. This should be checked as thoroughly as possible.

The second sink in the manual washing arrangement is used to remove the detergent. For this part of the dishwashing operation to be successful, the rinse water also should be kept clean and maintained at a temperature of at least 100°F, but preferably 120° to 140°F. If the rinse water becomes soiled, replace it as needed.

If preflushing, washing, and rinsing have all been performed properly, the job of adequate sanitizing is possible in the third sink. If final rinse water is to be used as the only means of sanitizing, it should be maintained at 180°F for adequate sanitizing action unless a chemical sanitizer is used. Chemical sanitizers should be prepared as directed in Figure 3-60.

In the hand washing operation, do not use dishcloths, dish mops, or soft sponges because they become soiled, soggy, and provide a medium for bacteria growth. Plastic brushes with firm bristles provide the friction necessary for cleaning.

Clean thoroughly for effective sanitization. Keep the sinks and brushes clean. Drain wash water frequently, refill with clean, fresh hot water, and add proper amount of detergent. Step-by-step procedures for manual dishwashing are provided in Figures 3-61 and 3-62; points are noted in Figure 3-63.

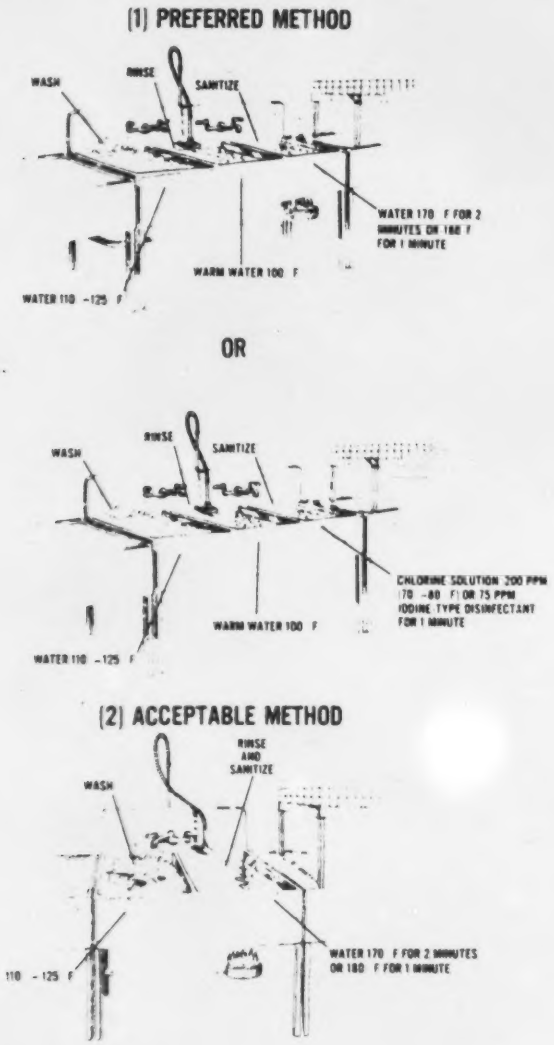

(1) PREFERRED METHOD
WASH
RINSE
SANITIZE
WATER 170 F FOR 2 MINUTES OR 180 F FOR 1 MINUTE
WARM WATER 100 F
WATER 110 -125 F
OR
WASH
RINSE
SANITIZE
CHLORINE SOLUTION 200 PPM (70 -80 F) OR 75 PPM IODINE TYPE DISINFECTANT FOR 1 MINUTE
WARM WATER 100 F
WATER 110 -125 F
(2) ACCEPTABLE METHOD
WASH
RINSE AND SANITIZE
WATER 170 F FOR 2 MINUTES OR 180 F FOR 1 MINUTE
110 -125 F

Figure 3-59. - Methods for Manual Washing of Dishes, Cooking and Serving Utensils.

Calcium hypochlorite (tech., 70 percent) (for initial dilution 200 ppm):

	Amount				
Water (70°–80° F), gallons	5	10	15	20	25
Sanitizers:					
Teaspoonsful	1½	3	4½	6	7
Cubic centimeters	6	11	17	23	28

Iodine-type disinfectant (for dilution 25 ppm, use 1 ounce to 5 gallons of water):

	Amount				
Water (72° F or room temperature) (gallons)	5	10	15	20	25
Sanitizers: fluid ounces[1]	1	2	3	4	5

Chlorine-iodine-type disinfectant (food service)

For sanitizing mess gear and utensils:
- Water (50° F minimum), gallons ..... 25 (100 sets of mess gear)
- Sanitizer, ounces ..... 4.77 (1 pouch)
- Instructions:
  1. Rinse thoroughly in sanitizing solution.
  2. Immerse in clean sanitizing solution for 10 seconds.
  3. Air dry.

For sanitizing fruit and vegetables (locally grown):
- Water (100° F), gallons 20
- Sanitizer, ounces ..... 4.77 (1 pouch)
- Instructions:
  1. Remove bruised spots from fruits or vegetables. Do not cut or peel.
  2. Wash thoroughly in sanitizing solution.
  3. Immerse in clean sanitizing solution for 10 minutes.

[1]Or use 1 teaspoon per gallon.

Note: For sanitizing large equipment, spray or swab with solutions containing twice the quantity of chemical sanitizers recommended above.

See table 3 note concerning the use of calcium hypochlorite.

Figure 3-60. - Recommended Quantity of Chemical Sanitizers.

Step	Procedure
1. Prepare water for washing, rinsing, and sanitizing	Fill sink with hot water (110°–125° F). Add proper type and quantity of dishwashing detergent. Fill second sink with fresh hot water at 100° F temperature for rinsing. Improvise flush rinse if only 2 sinks are available. Fill third sink with water to level to cover dip and drain baskets. If hot water is sanitizer, maintain 170°–180° F. Add proper type and quantity of sanitizer used. (See table 2–55.)
2. Wash	Prepare soiled dishes in accordance with table 2–52. Wash in sequence recommended. Use glasswashing brushes on glassware, washing inside and outside. Wash all other gear with sanitized plastic brush.
3. Rack	Place gear in dip and drain baskets. Rack glasses, cups, and bowls upside down. DO NOT CROWD. Keep similar articles together. Place washed knives, forks, and spoons with eating surfaces up in basket to facilitate reversing when ready to store. Place plates and saucers of similar size in one basket so rinses may touch entire surface. When first basket is full, rinse and sanitize as suggested in steps 4 and 5 to allow time for articles to air-dry (as recommended in step 6) and free basket to be reused.
4. Rinse in second sink	Use intermediate running water spray rinse if hot water in second sink is sanitizer; or use second sink to rinse. Rinse off all detergent before sanitizing. Change water frequently. Maintain rinse water at 100° F, or above.
5. Sanitize in the third sink	Use a thermometer to recheck temperatures: 170°–180° F for water sanitizer (70°–80° F if hypochlorite sanitizing solutions are used). Plunge baskets in 170° F water for 2 minutes or 180° F for 1 minute, or Plunge baskets in 70°–80° F solution of 200 ppm hypochlorite solution (70 percent available chlorine) for 1 minute, or Plunge filled baskets in solution of 25 ppm iodine-type disinfectant solution for 1 minute. Plunge filled baskets in solution of disinfectant, food service, for 10 minutes.
6. Dry	Lift baskets out on drain boards. AIR-DRY ONLY.

Figure 3-61. - Directions for Manual Washing of Eating Utensils.

Step	Procedure
1. Rinse after use, scrape, and sort according to type and size	Flush out inside of pans with hot water spray after use. Sort heavy pots and pans, steam-table inserts, beaters, bowls, ladles, pitchers, and other equipment into similar kinds.
2. Soak	Fill deep sink ¾ full of hot detergent water. Soak rinsed pans. Use cold-water soak for pans used to cook starch or egg dishes.
3. Prepare wash, rinse, and sanitize waters in 3-sink wash units	Sink 1: Wash water of 110° F, with proper detergent concentration. CHECK TEMPERATURES. CHANGE WATER OFTEN. Sink 2: Rinse water of 100° F temperature. CHECK TEMPERATURES. CHANGE WATER OFTEN. Sink 3: Rinsing and sanitizing water should be 170°–180° F.
4. Wash pots and pans	Scrub one pan at a time thoroughly inside and outside with a clean, sanitized brush. Use wire brush to remove carbon of burned food. **Note:** See description for descaling bread pans if heavy cleaning is required for these pans.
5. Rinse pots and pans to remove detergent	Immerse pans.
6. Sanitize	Heavy utensils must be sanitized by spraying or swabbing with double-strength sanitizing solution. Use hypochlorite solution or iodine-type disinfectant in proper proportions. (See table 2–53.)
7. Dry	Allow all pans to drain and air dry on clean surfaces or racks.
8. Store	Place upside down, or covered if necessary to hang.

Figure 3-62. - Directions for Handwashing Pots and Pans (Cooking/Serving Utensils).

GLASSWARE

WASH FIRST OR SEPARATELY

USE SPECIAL BRUSH

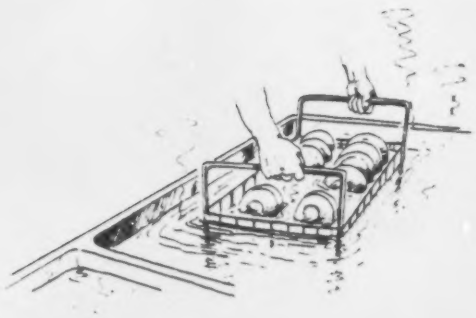
DISHES

WASH

AS USUAL

RINSE

170° F FOR 2 MINUTES OR MORE



WASH, RINSE, AND SANITIZE

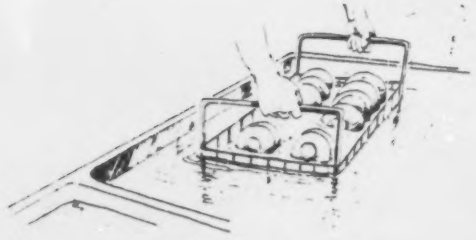
AS USUAL

RACK CORRECTLY

RIMS DOWN

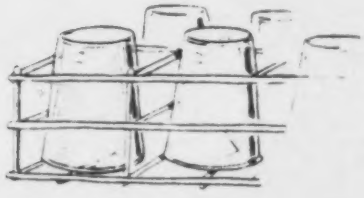
SANITIZE

180° F OR MORE, 1 MINUTE OR MORE



AIR-DRY

STORE, RIMS DOWN ON CLEAN SURFACE



AIR-DRY

1 MINUTE OR MORE

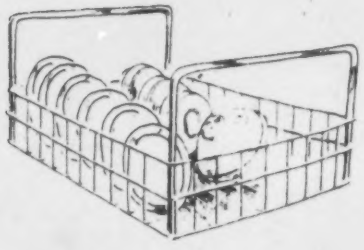


Figure 3- 63. Checkpoints in Manual Dishwashing.

SANITIZING

All eating and drinking utensils, surfaces of utensils, and equipment that contact food shall be sanitized by one of the following methods:

- Immersion in clean, hot water (170°F) for 2 minutes.

- Immersion for 1 minute in 180°F water or in a sanitizing solution containing:

  a. At least 50 ppm of available chlorine at 75°F or, if equipment is too large for immersion, treat with live steam from a hose, provided steam is made from potable water.

  b. At least 12.5 ppm of available iodine in a solution having pH not higher 5.0 and a temperature of not less than 75°.

  c. Any other approved chemical sanitizing agent.

All utensils that are to be completely disinfected by these sanitizers must be immersed in a solution of the proper strength. See Figure 3-60 for strengths of chemicals recommended for sanitizing in the Coast Guard enlisted dining faclities.

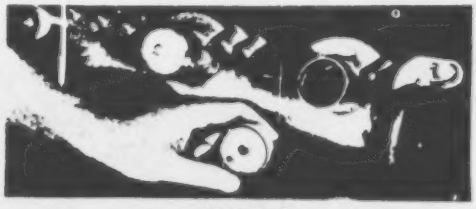
MACHINE DISHWASHING

High-standard dishwashing demands that the machine be kept clean inside and out. Lime deposits from water should not be allowed to accumulate inside the tanks even to the slightest degree. The machine must look and SMELL clean. Some tips on how to accomplish this may be found in Figure 3-64. Step-by-step directions for after-meal and daily cleaning of machines are given in Figure 3-65.

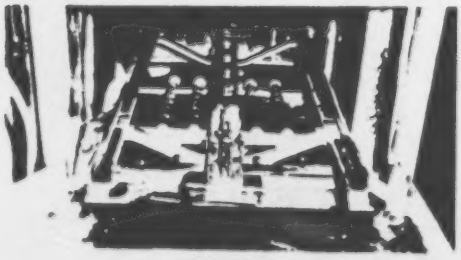
Machines properly maintained will operate with efficient service over a long period of time. If neglected, dishwashing machines, like any piece of mechanical equipment, will bring on costly repairs and decrease efficiency in cleaning and sanitizing.

A record showing replaced parts, and when the machine was lubricated and serviced should be kept. This will be invaluable as a guide to pointing out mechanical deficiencies before a breakdown occurs.

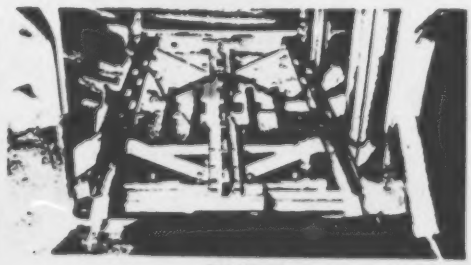
WRONG
Clogged wash arms contain toothpicks and other soil.



RIGHT
Remove wash arms daily and clean them out.



WRONG
Lime buildup in rinse section of dishwashing machine reduces washing efficiency and harbors bacteria.



RIGHT
Clean rinse arms allow full rinse pressure and eliminate dishwashing machine odors.

Figure 3-64. - Problem Areas in Cleaning the Dishwasher.

Step	Procedure
1. Shut off motor	Push stop button.
2. Close valves	The following valves should be shut off to rinse water circuits: Steam valve Hot water valve
3. Drain tanks (wash and rinse) and pump	Open drain valves and allow tanks to empty. Clean out bottom of tanks.
4. Remove cleaning doors. Disassemble removable tank parts	Remove, soak, and scrub with brush in hot detergent solution and rinse the following: Scrap trays Pump intake or suction strainer Wash and spray assembly (Make sure both upper and lower rinse pipes are cleaned free of lime deposits. Remove caps and brush thoroughly.) **Note:** Daily cleaning should include scrubbing interior and exterior of machine and hosing down with hot water when disassembled.
5. Replace removable parts and fill tank	Be certain all spray manifolds and the scrap tray are in place. Close drain valve (or valves of wash and rinse tanks if double tank). Check cleanliness of tank.
6. Single-tank machines: Run machine 5 complete cycles without racks. Double-tank machines: 5 minutes	Prepare cleaning solution as follows: Fill tank half full of water (both tanks, if double tank). Open hot water and steam valves to rinse water line or booster. Wash water temperature should be 140°-160° F. Final rinse water temperature should be 180° F. Add ½ cup dishwashing compound. Start machine.
7. Stop machine and drain	Open drain valves and empty tank. Close drain valves.
8. Remove and scrub splash curtains (double-tank machine)	Unsnap two ends and center curtains. Using scrubbing brush, scrub thoroughly with hot detergent water and rinse. Hang to dry. Replace.

Descaling dishwashing machines (weekly or as required)

1. Fill tank or tanks of the machine half full with clean hot water.
2. Add 7 fluid ounces phosphoric acid or a 2-percent acetic acid (vinegar) solution per gallon of water. Add 1 fluid ounce wetting agent per gallon of water.
3. Finish filling tank to overflow level.
4. Operate at highest temperature for about 1 hour.
5. Stop machine and drain out solution.
6. Refill tanks and add baking soda or 2 cups of detergent. Run machine for about 15 minutes. Stop machine and drain.
7. Refill and flush tank several times with fresh hot water. Keep temperature at highest level.

Safety note: Dishwashing compound contains strong alkalies. Rubber gloves should be used when handling. Rinse with cold water if detergent comes in contact with skin.

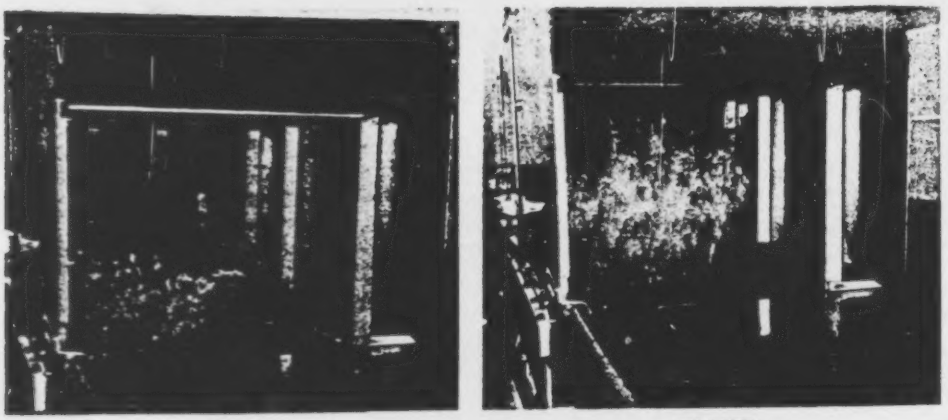
Figure 3-65. - Directions for After-Meal and Daily Cleaning of Dishwashing Machines.

Preflushing of dishes will help avoid clogging of spray nozzles with food particles. Clean wash water will prevent a buildup of bacterial population and subsequent contamination. Do not let wash water enter rinse tanks. Dishwashing machines are not garbage disposals, and an accumulation of food scraps and grease greatly hampers the washing operation. Check water flow pressure, using a proper gauge. On spray-type machines, flow should not be less than 25 pounds per square inch on line and not less than 10 pounds per square inch at rinse nozzles. An example of good wash pressure is shown in Figure 3-66.

Procedure for racking gear for washing is equally as important as preflushing. All items should be racked to permit washing solution and spray rinses to contact the surfaces of the articles. Overloading as well as improper placement of items on racks will impede the operation. Follow suggestions for racking and sequence for washing, cooking, and eating utensils given in Figure 3-58.

The dishwashing compound procured for use in Coast Guard dishwashing machines should prevent formation of scale on the interior of the machine and hard-water film on articles being washed because it is highly alkaline and will saponify and emulsify greasy film residues. Initial charges of machine dishwashing compound and subsequent recharges should be made in accordance with Figure 3-55 and 3-57. Detergent's concentration should remain constant to ensure proper cleansing. Detergent dispensers, mechanical or electrical, are described under "Dishwashing Detergent Control and Wetting Agent Dispensers." Regular cleaning of the dispensers is required in addition to frequent checks on condition and operational efficiency. Mechanical devices require as close a vigil as hand-operated devices, so the same rule applies to wetting-agent dispensers that operate automatically or semiautomatically.

Correct procedures for machine operation are included along with step-by-step directions for double-tank machines in Figure 3-67 and for single-tank machines in Figure 3-68.



WRONG
Poor wash pressure is created by protein food soil.

RIGHT
Good wash pressure increases the efficiency of the dishwasher.

Figure 3-66. - Check Wash-Water Pressure in Dishwasher.

Step	Procedure
1. Fill wash and rinse tanks	Open fill (inlet) valves. Water level should reach top of overflow tubes.
2. Charge wash tank with dishwashing compound	Determine proper type and quantity from tables 2-50 and 2-51. Place compound on scrap tray, or Pour compound into dispenser feeder.
3. Turn on water and steam	Open water supply and steam valves. Rinse tank (or booster heater if used to maintain temperatures). CHECK TEMPERATURE RISE: 180° F. Rinse tank.
4. Start machine	Push start button. Operate pumps and conveyor 1 or 2 minutes to raise temperature in wash tank to 140° F from rinse spray.
5. CHECK TEMPERATURES, SPRAYS, DETERGENT	Temperature readings should be adjusted to: 140°-160° F in wash tank. If temperature rises, open fill valve for more water to prevent baking on of protein foods. 180°-195° F in rinse tank. Open or close steam valve to adjust temperature. Force of recirculating wash spray should be sufficient for adequate wash. Stir detergent and replenish as required.
6. Feed racks into machine	Push each rack until forward end contacts conveyor lug only. Do not push beyond. Timing of wash is automatically determined by conveyor speed: Wash spray, 20 seconds; rinse spray, 20 seconds.
7. Remove racks	Conveyor should push racks halfway out of machine before operator removes them.
8. Air dry utensils and eating gear	Allow racks to set 1 minute to dry. Rap cutlery racks to free entrapped water.

Figure 3-67. - Directions for Dishwashing Operation (Double-Tank Machine).

80

Step	Procedure
1. Fill tank	Close drain valve. Open hot water and steam valves to rinse water-mixing valve (or booster). Partly fill tank with 140° F water. Finish filling with 180° F to obtain a water mixture temperature 160° F to indicated level or top of overflow pipe. Turn off valves.
2. Charge machine with dishwashing compound	Add proper type and amount of detergent to scrap tray or detergent feeder. Stir thoroughly.
3. Start machine	Push start button and run 2 minutes to mix detergent and hot water.
4. Check temperature, bypass valve opening, rinse sprays	Wash tank thermometer reading should be 140°–160° F. Rinse water reading should be 180°–195° F. Adjust rinse valve or booster.
5. Feed racks into machine	Open door and push rack into machine. Close door. Move control handle to wash position and start operating cycle (according to manual or automatic machine).
6. Time wash and rinse cycles	Manual machines should operate wash cycle 40 seconds and control then moved to rinse for 10 seconds before moving to closed position. Automatic machines are timed to 40 seconds wash, 10 seconds rinse.
7. Remove racks from machine	Open door and remove rack. Allow racks to remain on counter for 1 minute to air dry eating utensils. Rap silver racks to free water.

Figure 3-68. - Direction for Dishwashing Operation (Single-Tank, Door-Type Manual or Automatic Machines).

CLEAN DISH STORAGE

The next phase of the dishwashing operation is storage. All is lost in sanitation if inadequate and improper storage allows cooking and eating utensils to become recontaminated by dust, insects, and bacteria.

If sufficiently hot water has been used in the final rinse and draining has been adequate, complete drying will proceed. If water remains on gear after leaving the machine or after final manual rinse, rap racks or baskets sharply on drain sinks or counters to free entrapped water. DO NOT TOWEL DRY. Drainboards should be scrubbed down and sanitized after each use with a combination detergent-sanitizer solution.

The cleaned and sanitized equipment must then be safely transported to storage areas. Dishes must not be so carried that they come in contact with the personal clothing of operators. Handling gear without sanitized gloves is strictly forbidden. Surfaces of eating utensils that come in contact with the mouth-bowls of spoons, tines of forks, and edges of cups and glasses-must not be contaminated. Use portable carts or self-leveling dish carts to transport cleaned articles. Wash the carts daily with hot water to which a detergent and a sanitizer have been added. As shelves and flatware holders are emptied, they should be cleaned and sanitized. These special baskets or containers for silverware should be handled so that the inner surfaces are not touched when transfer is made from dishwasher. Figure 3-69 shows proper storage of glasses and cups. See Figure 3-70 for step-by-step sequence for proper storage of cleaned gear.

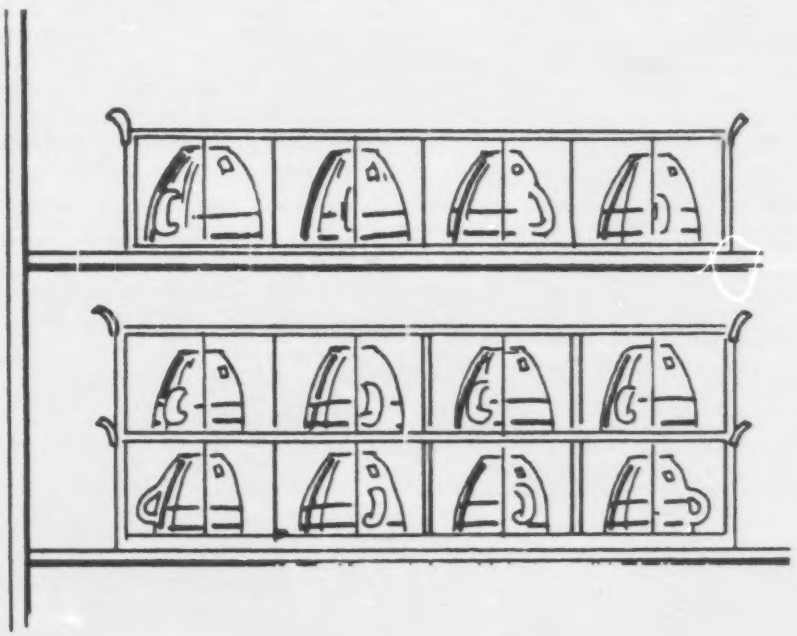


Figure 3-69. - Properly Stored Glasses and Cups are Stored "Bottoms Up," Preferably in the Wire Baskets or on Trays.

Step	Procedure
1. Keep storage areas clean	Wash storage shelves frequently with hot detergent water and sanitize with solution.
2. Keep transport equipment clean	Wash, rinse, and sanitize after use the following: Soiled dish carts, food wagons. Dishwashing racks, dip and drain baskets (stack to dry off deck). Silverware compartments. Clean dish table area.
3. Handle all cleaned gear in sanitary manner	Personnel should wash hands and rinse in germicidal solution before working with cleaned gear. Place trays containing inverted glasses on shelf to preclude contamination. Use similar storage for bowls and cups. Prevent contamination of plates when storing. Catch plates coming off flat-type conveyor but with gloved hands which are clean and sterilized. Turn dishes face up; stack in easy piles to handle when air dry. Machine-cleaned silverware should be inverted with handles up from wash baskets into cylindrical-shaped containers or compartments for storage.
4. Store clean, air-dried pots and pans	Place upside down or cover. Never hang where overhead leakage can contaminate or where splashing from cooking equipment or deck washing occurs. Improper storage means rewashing and sanitizing before use.

Figure 3-70. - Directions for Storing Cleaned, Sanitized Eating Gear and Utensils.

GARBAGE AND WASTE COLLECTION AND DISPOSAL

The Coast Guard enlisted dining facility has responsibility for maintaining cleanliness and sanitation of equipment used in collecting and disposing of garbage and waste.

CONTAINERS

These must be leakproof and of nonabsorbent material outfitted with tight fitting covers. Ashore activities should have a sufficient number available to handle the waste materials between collection periods.

STORAGE EQUIPMENT

Garbage refrigerators, storage facilities, or rooms are included in this category. Outside garbage-storage facilities ashore should consist of a concrete slab or a rack 12 inches off the ground for a single bank of containers and 18 inches above ground for a multiple bank of containers. If enclosed areas are used for storing garbage, these should be constructed of an easily cleanable material.

GARBAGE GRINDERS

Food waste from mess hall collection and refuse from preparation should be placed in grinders if possible. These grinders should be installed to comply with applicable plumbing regulations at each activiy.

Adequate cleaning instructions for maintaining garbage and waste disposal equipment must be given to scullery personnel as part of their training program. Step-by-step directions for cleaning trash cans and garbage grinders, garbage cans, and garbage refrigerators are given in Figures 3-71 through 3-73.

Step	Procedure
1. Scrub	Pour 1 gallon of strong, hot detergent solution into each trash can. With brush, scrub vigorously inside, outside, and bottom of each can.
2. Rinse	Attach hose to hot-water spigot. Hose can inside and out.
3. Drain	Invert to drain.
4. Clean cleaning area	Rough-clean by sweeping trash into pile. Brush into dust pan and empty into appropriate container

Figure 3-71. - Cleaning Trash Cans.

Step	Procedure
1. Shut off motor and empty tank	Push stop button.
2. Clean tank	Dump bucket of strong, hot detergent solution into tank and scrub interior.
3. Rinse tank	Flush interior walls with hot water.
4. Clean exterior	Scrub with hot detergent solution and clean brush; rinse.

Figure 3-72. - Cleaning a Garbage Grinder.

Step	Procedure
1. Sanitize	Invert empty garbage can over live steam jet and turn on steam for 1 minute or longer if not kept in garbage refrigerator.
2. Clean	Pour 1 gallon of hot detergent solution into each garbage can and scrub vigorously with gong brush inside, outside, and bottom of each can.
3. Rinse	Attach hose to hot water spigot. Hose can inside and out.
4. Drain	Invert to drain.
5. Clean lids	Scrub lids with brush dipped in strong hot detergent solution.

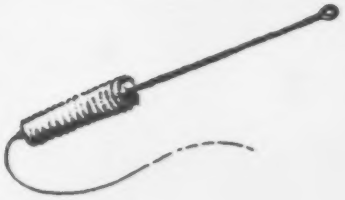
Figure 3-73. - Cleaning 20-gallon Garbage Cans.

SELF-QUIZ #3

PLEASE NOTE: Many students study ONLY the self-quizzes and pamphlet review quiz, thinking that this will be enough to pass the End-of-course Test. THIS IS NOT TRUE. The quizzes are to help you in reviewing the assignment. They are NOT a source for EOCT question. To pass the End-of-course Test, you must study all the course material.

1. Identify the following brushes by placing the correct name in the blank under each diagram.

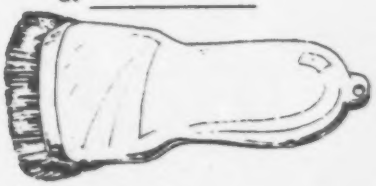
a. _____



b. _____

c. _____

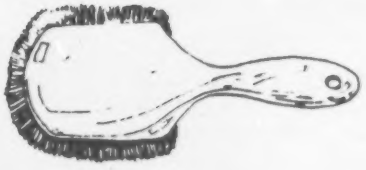
d. _____



e. _____

f. _____

g. _____



h. _____

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2. What are the two general classes of cleaning compounds?

3. What cleaning utensil is absolutely prohibited?

4. What compound should you use to descale a dishwashing machine?

5. Why should you NEVER use soap in dishwashing machines?

6. In a dishwashing machine, the wash cycle should be maintained in the temperature range of 140°F. to _____

7. In a dishwashing machine, what is the correct temperature range for the rinse cycle?

8. State the proper procedures for operating a double-tank dishwashing machine.

a. _____
b. _____
c. _____
d. _____
e. _____
f. _____
g. _____
h. _____

9. For manual (hand) dishwashing, what is the recommended wash temperature range?

10. For manual (hand) rinsing, what is the recommended temperature?

11. Name the accessory equipment for manual dishwashing.

a. _____
b. _____
c. _____
d. _____
e. _____

12. What are the procedures for manual dishwashing?

a. _____
b. _____
c. _____
d. _____
e. _____
f. _____
g. _____
h. _____
i. _____

13. What method should you use to dry hand-washed eating utensils?

14. State the purpose of cleaning food service utensils and equipment.

15. Explain the proper procedure for cleaning stainless steel surfaces.

18. To clean the interior of an oven, what substance should you sprinkle on the hardened spillage?

19. Do not use _____ to clean the oven.

20. Explain how to clean a griddle.

21. When destaining a coffee urn, how long should you allow the destaining solution to remain in the urn? At what temperature?

22. How often MUST you disassemble and clean the valves of a milk dispenser?

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23. When descaling a dishwashing machine, you should:

    a. Fill the tank(s) with _____.
    b. Add 7 fulid ounces of _____ or 2% solution of _____.
    c. Operate machine at highest temperature for _____ hour(s).
    d. Drain machine, refill tank(s) and add _____.
    e. Run machine for about _____ minutes and drain.
    f. Refill and flush tank(s) several times with _____.

24. When storing clean dishes, you should make certain that the dishes do not come in contact with _____, _____, and _____.

25. What is the FIRST step you should take when cleaning the Gaylord Ventilator System aboard ship?

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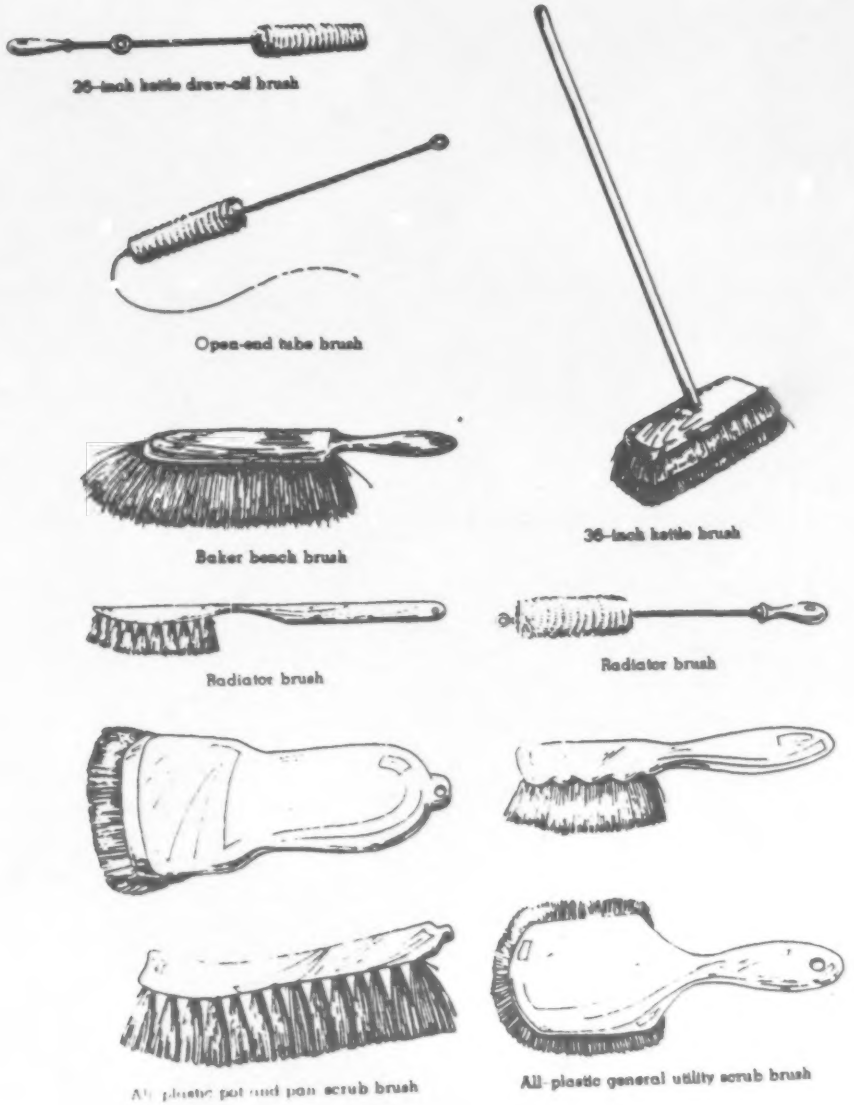
ANSWERS TO SELF-QUIZ #3

Following are the correct answers and references to the text pages which cover each question and correct answer. To be sure you understand the answers to those questions you missed, you should restudy the referenced portions of text.

1. The brushes shown in the diagram are: (Page 3-9)



2. The two general classes of cleaning compounds are soap and detergents. (Pages 3-4)

3. The use of steel wool is prohibited as a cleaning utensil. (Pages 3-10)

4. To descale a dishwashing machine you should use phosphoric acid compound. (Pages 3-53)

5. You should NEVER use soap in dishwashing machines because soap may cause excessive sudsing which will clog the spray arms and coat eating utensils and inner walls of the dishwashing machine. (Pages 3-6)

6. In a dishwashing machine, the wash cycle should be maintained in the temperature range of 140°F. to 160°F. (Pages 3-43)

7. In a dishwashing machine, the correct temperature range for the rinse cycle is 180°F. to 195°F. (Pages 3-43)

8. The proper procedures for operating a double-tank dishwashing machine are: (Pages 3-55)

   a. Fill wash and rinse tanks.
   b. Charge wash tank with dishwashing compound
   c. Turn on water and steam
   d. Start machine
   e. Check temperatures, sprays, detergents
   f. Feed racks into machine
   g. Remove racks
   h. Air dry utensils and eating gear

9. For manual (hand) dishwashing, the recommended temperature range is 110°F. to 125°F. (Pages 3-46)

10. For manual (hand) rinsing, the recommended temperature is 180°F for 1 minute. (Pages 3-43)

11. Equipment accessories for manual dishwashing are: (Page 3-46)

    a. Dip and drain baskets
    b. Booster heater for keeping water hot
    c. Installed thermometers to make frequent checks on water temperature
    d. Approved brushes for washing glasses and other gear
    e. Clean dish storage facilities

12. The procedures for manual dishwashing are: (Page 3-46)

    a. Sort and scrape soiled eating utensils and dishes
    b. Prewash rinse
    c. Presoak utensils
    d. Prepare water for washing, rinsing and sanitizing
    e. Wash
    f. Rack
    g. Rinse in second sink
    h. Sanitize in third sink
    i. Dry

13. Hand-washed eating utensils should be AIR DRIED ONLY. (Page 3-49)

14 The purpose of cleaning food service facilities, equipment, and utensils is to remove food and other soils that promote bacterial growth. (Page 3-2)

15. To clean stainless steel, you should wash the surfaces with a general purpose detergent and a clear water rinse. Then wipe the surface dry to prevent water spotting. (Page 3-21)

16. To clean a steam jacket kettle, you should: (Page 3-30)

    a. Open draw-off faucet and flush with water.
    b. Close valve and fill with water.
    c. Refill and add detergent to water. Clean interior. Drain. Flush out.
    e. Scrub exterior and frame with hot detergent water and brush.
    f. Resterilize with 180°F. Water.

17. To clean the interior of a deep-fat fryer, you should fill the tank with water, add 2 ounce of dishwashing compound, and boil for 10-20 minutes. (Page 3-31)

18. To clean the interior of an oven, sprinkle salt on the hardened spillage on the oven floor. (Page 3-33)

19. Do not use water to clean the oven. (Page 3-33)

20. To clean griddles: (Page 3-34)

    a. Turn off heat. Scrape surface.
    b. Clean grease and/or drain troughs.
    c. Empty grease receptacles.
    d. Scrub guards. Rinse and dry.

21. When destaining a coffee urn, allow the destaining solution to stand for 1 hour at 170°F. to 180°F. (Page 3-38)

22. On a milk dispenser, you MUST disassemble and clean the valves daily. (Page 3-41)

23. When descaling a dishwashing machine, you should: (Page 3-53)

    a. Fill the tank(s) with clean hot water.
    b. Add 7 fluid ounces of phosphoric acid or 2% solution of acetic acid (vinegar) solution.
    c. Operate machine at highest temperature for 1 hour.
    d. Drain machine; refill tank(s) and add baking soda.
    e. Run machine for about 15 minutes and drain.
    f. Refill and flush tank(s) several times with fresh hot water.

24. When storing clean dishes, you should make certain that the dishes do not come in contact with dust, insects, or bacteria. (Page 3-57)

25. When cleaning the Gaylord Ventilator system aboard ship, the FIRST step you should take is to turn off the blower. (Page 3-14)